INITIAL STUDY FOR:

SHEA/BAKER RANCH

SCH # 2004071039

prepared for:

CITY OF LAKE FOREST

Contact:
Carrie Tai, AICP
Senior Planner

prepared by:

THE PLANNING CENTER

Contact:
Konstanza Dobreva
Senior Planner

JANUARY 2012

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COLF-03.0E

JANUARY 2012

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1. Introduction

Shea/Baker Ranch Associates, LLC (SBRA) seeks City approval for an Area Plan (AP 2-11-1732) and Tentative Tract Map 16466 for a residential and mixed-use development consisting of 2,379 residential units and 25,000 square feet of commercial uses (Project) within the City of Lake Forest, Orange County, California. The site was partially graded in conjunction with an entitled business park development, but is otherwise undeveloped except for a number of small structures related to a nursery that occupies the northwestern portion of the overall property.

The City of Lake Forest, as Lead Agency for the project, is responsible for preparing environmental documentation in accordance with the California Environmental Quality Act (CEQA) as amended, to determine if approval of the discretionary actions requested and subsequent development could have a significant impact on the environment. This Initial Study will provide the City of Lake Forest with information to assess potential impacts of the proposed project.

The Shea/Baker Ranch Planned Community was Site 1 of seven sites analyzed in the Lake Forest Opportunities Study Area (OSA) Program Environmental Impact Report (PEIR), which was certified in July 2008. An Addendum to the OSA PEIR was prepared and approved in July 2010 for a General Plan Amendment (GPA), Zone Change, and Development Agreement to redesignate the Shea/Baker Ranch project site from Business Park to Residential, Mixed-Use, and Open Space uses. A Development Agreement was also approved. To implement the GPA and Zone Change approved in 2010, a Tentative Tract Map and Area Plan have been submitted to describe the project level implementation measures for the Shea/Baker Ranch property. Where the environmental impacts of the proposed SBRA Project were analyzed in the OSA PEIR, the analysis from the OSA PEIR has been incorporated into this Initial Study as permitted by CEQA.

1.1 PROJECT LOCATION

The Shea/Baker Ranch project site is a 386.7-acre proposed master-planned community located in the northwestern portion of the City of Lake Forest. The project is bounded by Borrego Canyon Wash on the northwest, Bake Parkway and existing business park development on the south, the State Route 241 (241 Toll Road) to the northeast, and an Irvine Ranch Water District reservoir site on the east. Figure 1, *Regional Location*, and Figure 2, *Local Vicinity*, show the location of the project site in the regional and local contexts of Orange County and Lake Forest, respectively. An aerial photograph of the project site and its surroundings is shown on Figure 3. While the overall acreage is 386.7, it should be noted that only 372.7 are being developed, as the remainder has been constructed at Alton Parkway. Access to the project site is currently provided by Bake Parkway from the south and the current terminus of Rancho Parkway from the east.

The City of Lake Forest is surrounded by the City of Irvine to the west; Whiting Ranch Wilderness Park and an unincorporated area of Orange County to the north; the City of Mission Viejo to the south; and the Cities of Laguna Hills and Laguna Woods to the south. Terrain in the City ranges from the Saddleback Valley in the southern part of the City, to hills in the north that are continuous with foothills of the Santa Ana Mountains north of the City. Much of the City has a gentle southwest slope, with elevations ranging from approximately 300 feet above mean sea level (amsl) at the southwestern corner of the City to approximately 1,500 feet at the northern end of the City. Much of the City is developed with residential uses; commercial uses are concentrated near Interstate 5 (I-5) at the southern end of the City, 241 (Toll Road) in the northern part of the

City, and along three major southwest-northeast arterial roadways: Bake Parkway, Lake Forest Drive, and El Toro Road.

1.2 ENVIRONMENTAL SETTING

1.2.1 Project Background

Shea/Baker Ranch has multiple previous project approvals and entitlements. The property was formerly under the jurisdiction of the County of Orange, and in April 1988, the County approved an Area Plan and Development Agreement and EIR for a 691-acre site commonly referred to as the "Baker Ranch," of which the Shea/Baker Ranch property is a part. The County-approved Area Plan provided for the development of commercial and industrial uses on the Shea/Baker Ranch property. Because of the property's proximity to the then-operating Marine Corps Air Station (MCAS) El Toro, land uses on the property were limited to non-residential uses due to noise impacts from aircraft overflight. In 1991, the City of Lake Forest incorporated and the Shea/Baker Ranch property came under the jurisdiction of the City. In January 2000, the City approved a revised version of the Baker Ranch Area Plan that amended the plan for the 386.7-acre Shea/Baker Ranch property, and re-authorized the Development Agreement by substituting the City for the County. Portions of the County's "Baker Ranch" Area Plan have been developed for commercial/industrial uses. The 386.7 acres that comprise the Shea/Baker Ranch Project Area Plan were previously included in the County's "Baker Ranch" Area Plan but will now be the subject of a new, separate Shea/Baker Ranch Area Plan. The Shea/Baker Ranch Area Plan incorporates Area 1 (which now also includes former Planning Area 2) and Planning Area 7 of the Baker Ranch Area Plan.[1]

In 1999, MCAS El Toro closed and efforts to construct a new County airport came to a close. Consequently, a number of undeveloped properties located in close proximity to the former MCAS El Toro were no longer limited to non-residential uses. The City established an 800-acre study area that comprised these properties and undertook a land use study to analyze proposed and anticipated land use changes within the study area. This study area was referred to as the Opportunities Study Area (OSA) and encompassed seven properties, including the Shea/Baker Ranch property. In 2006, a PEIR was prepared to analyze the anticipated land use changes within the 800-acre study area. This PEIR identified that the OSA project would have significant impacts to the environment in the areas of Aesthetics, Agriculture, Air Quality, Water Quality, and Population and Housing. Portions of the PEIR were recirculated in 2008 to analyze a new alternative and to add an analysis of Global Climate Change. The Shea/Baker Ranch was Site 1 of seven sites analyzed OSA PEIR. The proposed land use changes–redesign of the property from business park uses to predominantly residential uses–for Shea/Baker Ranch were evaluated as part of this PEIR. In June 2008, the City certified the PEIR in connection with the amendment of its General Plan for the Opportunities Study Area.

In July 2010, the City approved an Addendum to the PEIR along with a General Plan Amendment, Zone Change, and Development Agreement reflecting the land uses described in the proposed Shea/Baker Ranch Area Plan (AP 2-11-1732). The 2010 Zone Change also modified the boundaries of the planning areas of the 2000 City-approved Area Plan and created a single planning area (Planning Area 1) that conformed precisely to the 386.7 acre Shea/Baker Ranch ownership that is the subject of the current applications.

The City is currently constructing a segment of Alton Parkway that extends from Commercentre Drive to Towne Centre Drive through the Shea/Baker Ranch project site pursuant to the terms of the Shea/Baker Ranch Development Agreement and approvals granted by the County of Orange in 2010. The impacts of the Alton Parkway construction project were analyzed in the Alton Parkway Extension Project EIR 585, prepared

[1] The Shea/Baker Ranch Area Plan incorporates Area 1 (which now also includes former Planning Area 2) and Planning Area 7 of the Baker Ranch Area Plan.

and certified by the County of Orange in September 2007 (Alton Parkway Extension EIR). In addition to the extension of Alton Parkway, the Alton Parkway Extension EIR evaluated improvements to the Borrego Wash which is an unimproved wash comprising the northwest boundary of the project area. Improvements to Borrego Canyon Wash consist of a Bypass Channel, which will be constructed parallel to the existing wash alignment. The following permits have been issued for the Borrego Canyon Wash improvements: Section 404 individual permit; U.S. Fish and Wildlife Service Formal Section 7 consultation for the least Bell's vireo and coastal California gnatcatcher; California Department of Fish and Game Lake or Streambed Alteration Agreement; California Department of Fish and Game California Endangered Species Act Consistency Determination; and California Regional Water Quality Control Board. 2010. Clean Water Act Section 401 Water Quality Standards Certification. Although improvements to Borrego Wash are addressed by the Alton Parkway Extension EIR, the construction of the Borrego Canyon Wash improvements is tied to the construction phasing of the Shea/Baker Ranch project. Construction of the Borrego Canyon Wash improvements will occur concurrent with the project grading phase adjacent to the Wash.

1.2.2 Existing Land Use

The project site was partially graded in conjunction with the prior commercial/industrial "Baker Ranch Area Plan" entitlement and remains undeveloped except for a number of small structures related to a nursery that occupies the northwestern portion of the overall property. There is also an approximately 13-acre paved area used primarily for storage of recreational vehicles, north of Bake Parkway and west of Baffin Bay Drive (Baker Ranch RV Storage, 25690 Baffin Bay Drive, Lake Forest, CA 92630).

Approximately 50 percent of the site has been graded, primarily the eastern and southern portions, including the vehicle storage facility. The remainder of the project site is primarily agricultural with remnants of avocado orchards and an ongoing wholesale/retail nursery operation. There are a number of buildings associated with the nursery operation, including a sales office, shade structures, portable agricultural chemical storage buildings, a cluster of maintenance buildings, and a vehicle storage area near the southerly end of the facility. There are also two occupied residences, one located on a small hill near the central portion of the nursery or the northwestern portion of the overall site, and a second located on an elevated area northeast of the nursery and somewhat more central to the overall site. Each residence has several small outbuildings and storage areas. See Figure 4, *Existing Land Uses*. Work is ongoing for the extension of Alton Parkway between Towne Centre Drive on the northeast, through and along the entire length of the Project site to Commercentre Drive. The remainder of Alton Parkway extending from Commercentre Drive to Irvine Boulevard west of the site is outside of the jurisdiction of the City and is being constructed by the County of Orange.

1.2.3 Surrounding Land Use

The Shea/Baker Ranch project site is located north of Bake Parkway, southeast of the Borrego Canyon Wash, between the 241 Toll Road and Commercentre Drive. The project site is generally surrounded by business park development and undeveloped open space. The commercial areas of the Foothill Ranch Planned Community are located to the north and northeast of Shea/Baker Ranch, immediately north of the 241 Toll Road. Existing business park developments, including Pacific Commercentre and Baker Ranch, are located at the northwestern edge and east and south of the site. The open space to the northwest is currently owned by the federal government. Most of this area remains natural open space. The Federal Aviation Administration (FAA) maintains navigational aids within a small portion of the area and has agreements with the Federal Bureau of Investigation (FBI) and the U.S. Fish and Wildlife Service regarding use of the remainder of the property. The FBI uses the remaining infrastructure (e.g., roads and bunkers) in the open space for agent training. The former MCAS El Toro is located west of the project site. A large portion of the area, which is still under federal agency control, consists of regionally significant open space and is part of

the County of Orange's Natural Communities Conservation Plan (NCCP). Existing Irvine Ranch Water District (IRWD) water reservoirs are located on a hill along the eastern edge of the community. Adjacent roads include Bake Parkway, Commercentre Drive, Towne Centre Drive, and Rancho Parkway.

1.2.4 Proposed Land Use

The project consists of an Area Plan and a Tentative Tract Map. The Shea/Baker Ranch is envisioned to include a wide range of housing types, including mixed-uses among a community-wide open space and recreational system. The proposed Area Plan for the Shea/Baker Ranch community provides for the following land uses with a total of 2,379 residential units:

Residential

- Up to 1,638 for-sale homes, on approximately 308 acres, ranging from low density (2–7 units per net acre) to medium density (up to 25 units per net acre)
- A broad variety of home styles, including single-family detached, motor courts, cluster homes, green courts, flats, townhomes, and condominiums

Mixed Use

- A maximum of approximately 50 acres designated for mixed-use development
- The mixed-use development contemplates commercial areas developed together with multifamily residential units ranging from low-medium to high densities
- A maximum of 25,000 square feet of commercial development and up to 741 residential units, including affordable housing units

Usable Open Space

The community provides over 100 acres open spaces and parks. Of those, almost 31 acres are usable open spaces, as follows:

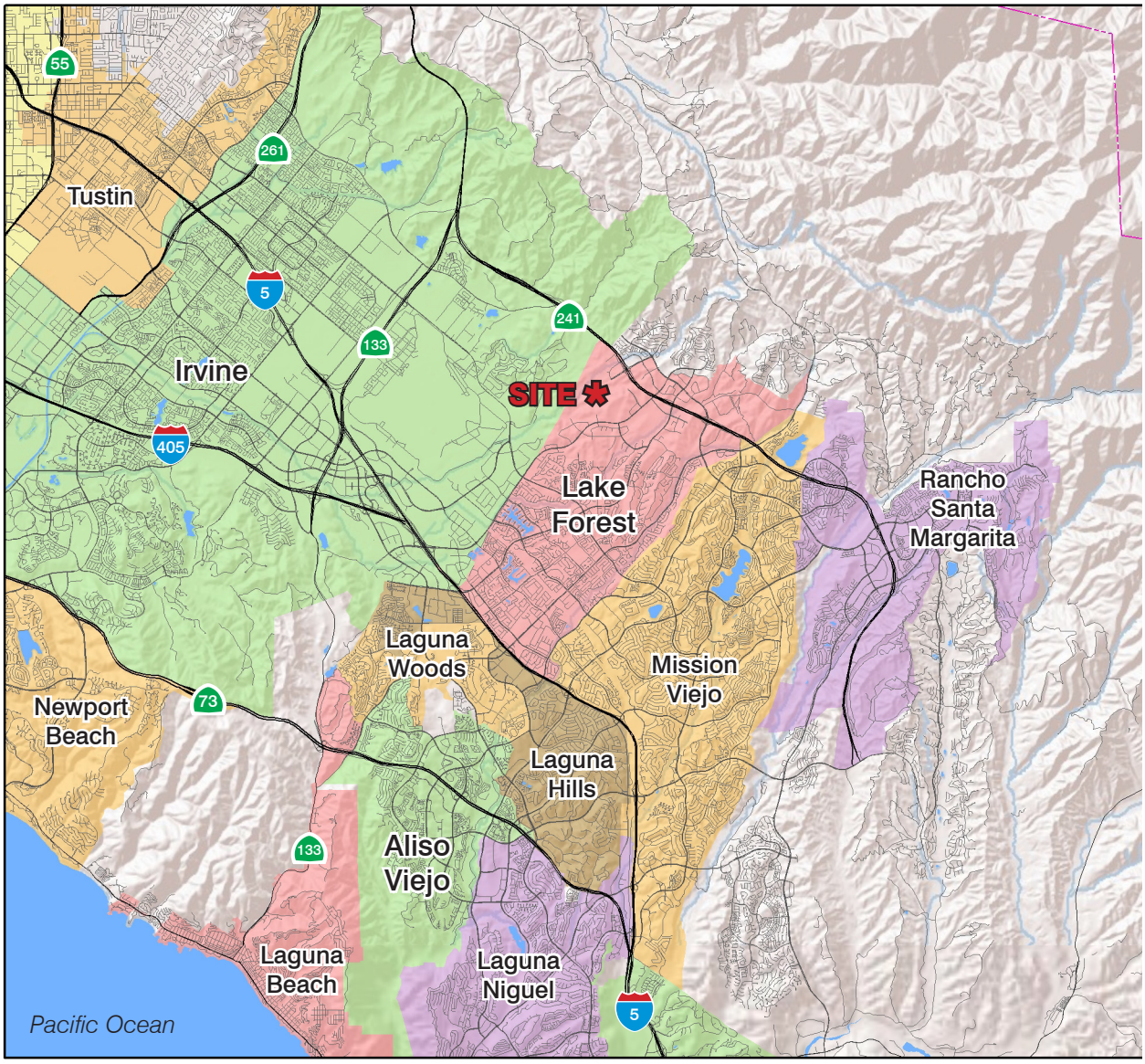
- Approximately 12 acres of community and neighborhood parks, in addition to trails and paseos.
- The 7.46-acre Community Park.
- The 8.37-acre Central Linear Park (with 7 usable acres)
- The 5.05-acre Borrego Linear Park (including a recreational trail).

Slopes and Medians

Non-park open space are also provided in the community:

- Approximately 55.76 acres contained within slopes, paseos, the detention basin, and other open spaces, and approximately 15 acres within parkways and medians.
- Borrego Canyon Wash-14.93 acres.

Regional Location



Site Boundary

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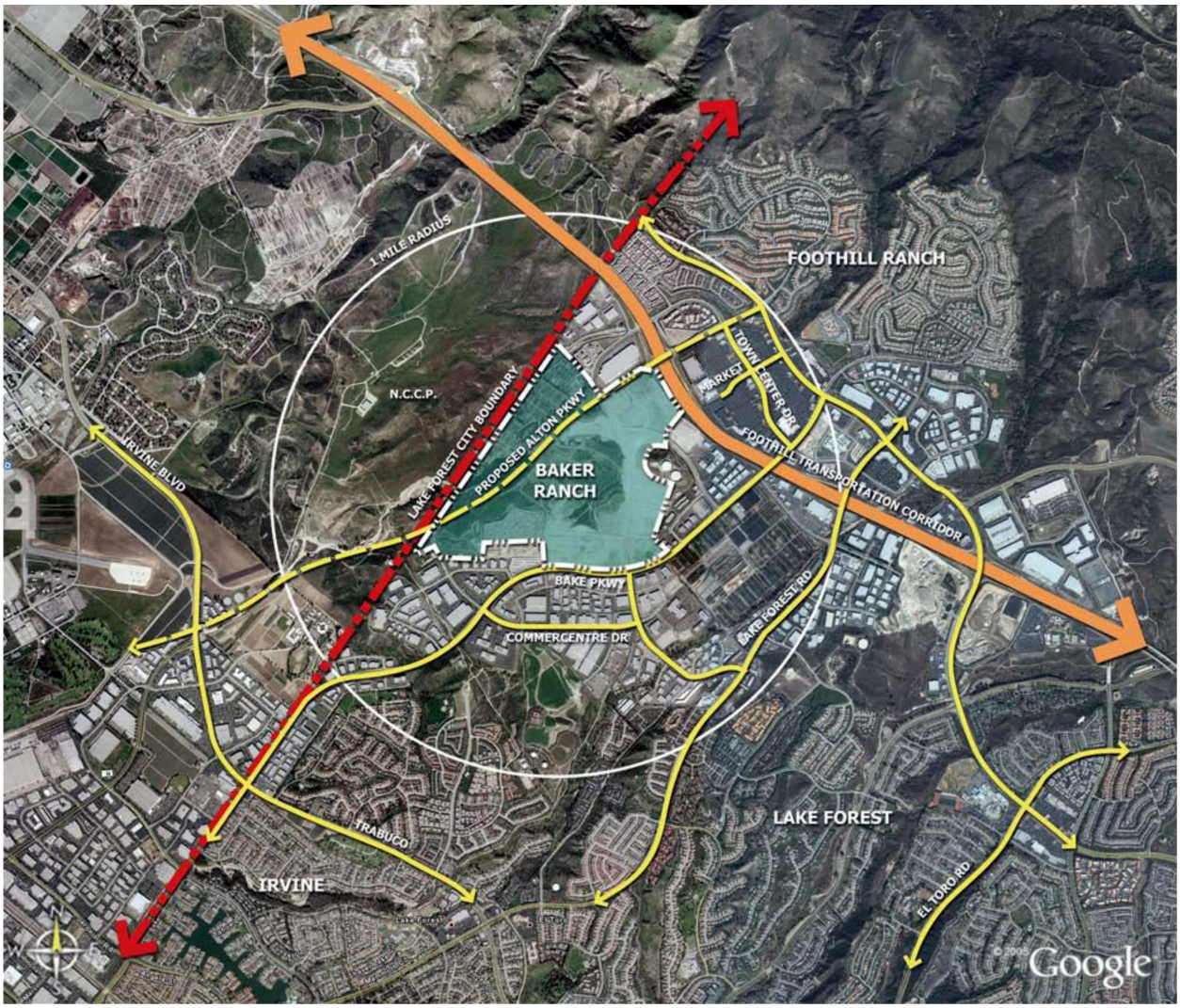
Local Vicinity



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Source: Lexington GeoScience 2011

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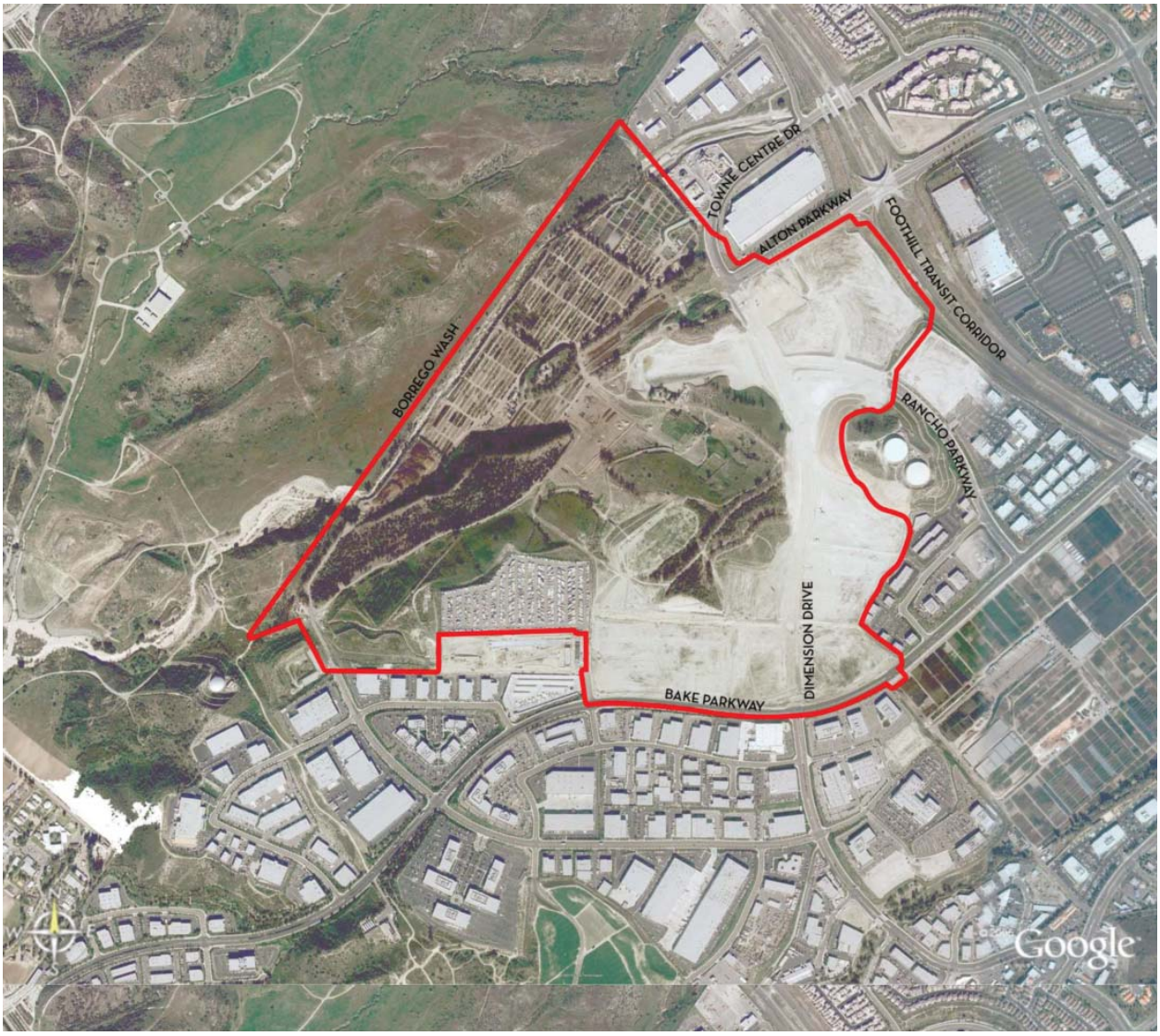
Aerial Photograph



Site Boundary

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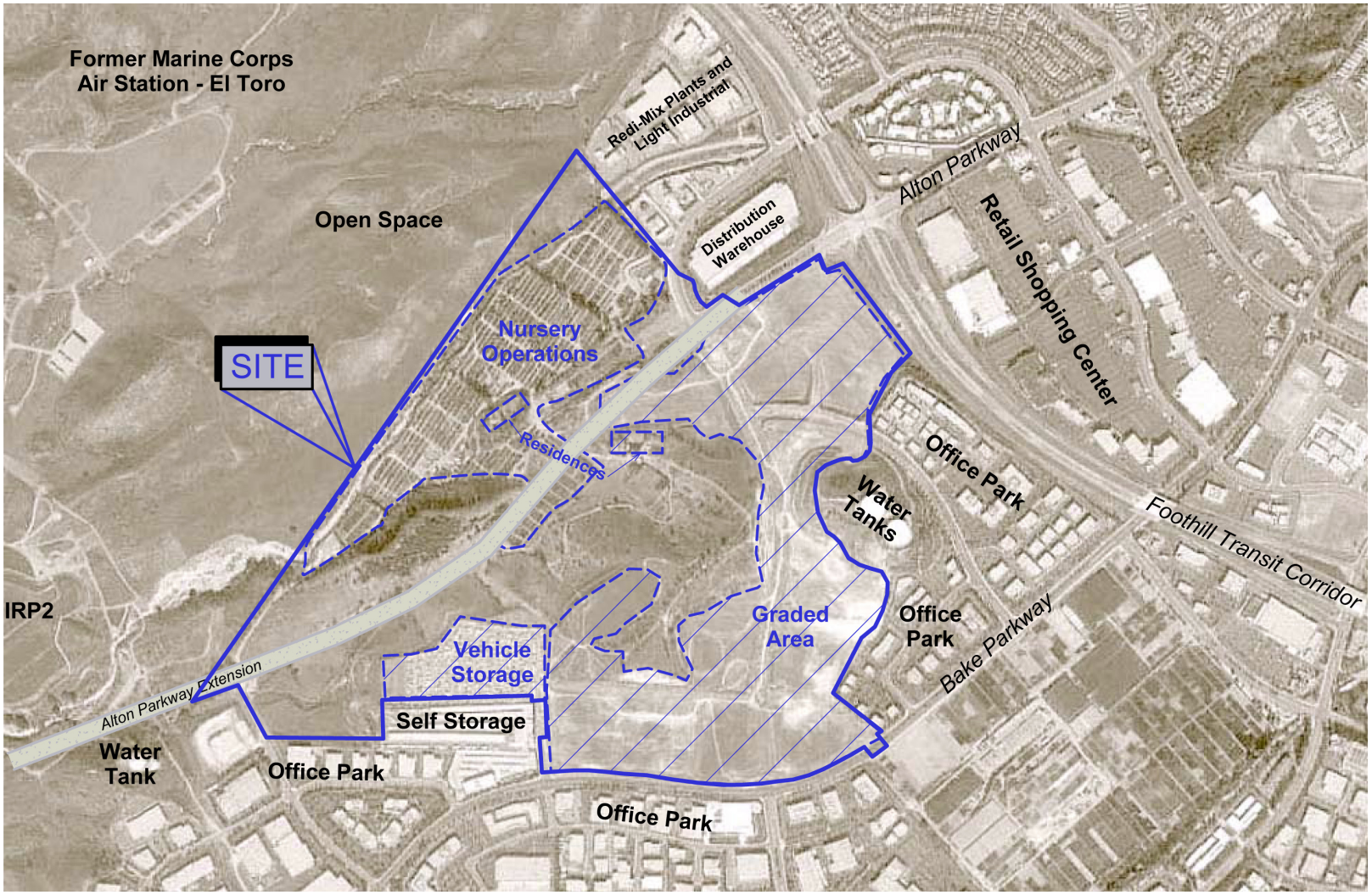
Existing Land Uses



Source: Lexington GeoScience 2011

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Borrego Canyon Wash

As part of the Project, the segment of the Borrego Canyon Wash that extends the length of the property will be modified to repair erosion damage, to stabilize the channel, and to allow for revegetation of the Wash. The proposed improvements to the Borrego Canyon Wash were described and evaluated in the County of Orange Alton Parkway Extension EIR (No. 585) which was certified in September 2007 (with subsequent addenda). Because the proposed improvements will require work within the Wash which has been designated as "waters of the U.S." and "waters of the State," and because of the Wash improvements being reviewed in conjunction with the Alton Parkway extension, permits and approvals from the U.S. Army Corps of Engineer, Regional Water Quality Control Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game were obtained prior to the commencement of construction of Alton Parkway. These permits also cover impacts to other waters of the U.S. and State within the Shea/Baker Ranch property. The impacts to these aquatic and associated biological resources on the Shea/Baker Ranch property were analyzed in the OSA PEIR, and then at a project-level of detail in the County's Alton Parkway Extension EIR.

As described in the County's Alton Parkway Extension EIR, the Borrego Canyon Wash will be improved such that in the future it will only carry low flows thus minimizing the opportunity for erosion damage and allowing for revegetation of the Wash. A parallel bypass drainage system will be constructed to carry all other flows (i.e., storm flows) from the upstream areas. The bypass system will consist of a box culvert with an outlet and energy dissipation structure that will be built at the southern end of the Shea/Baker Ranch property. The applicant is pursuing an agreement that will allow this parallel system to be dedicated to the Orange County Flood Control District upon completion.

Offsite Improvements

The project also includes offsite improvements to Baffin Bay Drive and the extension of reclaimed and domestic water lines within the existing right-of-way of Rancho Parkway. Baffin Bay Drive is an existing road adjacent to the southwest side of the Shea/Baker Ranch project that provides access to established business park uses. This road was at one time planned to extend north beyond its existing termination point. Instead, the project will construct a cul-de-sac at the existing terminus of Baffin Bay Road.

1.2.5 Project Phasing

Grading

Implementation of the conceptual grading plan requires approximately 5,000,000 cubic yards of cut and fill. Project grading is anticipated to occur in two phases. Planning Areas 1A, 1B, 1C, 1D, and 1F and the portions of Planning Areas 1E and 1L immediately adjacent to "A" and "B" streets are included within the grading Phase 1. Phase 1 begins the grading of certain areas that will be completed during Phase 2. The total amount of cut and fill within Grading Phase 1 is approximately 2,000,000 cubic yards, including 1,000,000 yards of cut from Grading Phase 2. The second phase of grading will establish the ultimate condition and includes Planning Areas 1E, 1L, 1I, 1G, 1H, 1K and PA 7. Also Grading Phase 2 includes the stabilization of the Borrego Canyon Wash and installation of the box culvert improvements. Grading Phase 2 includes 3,000,000 cubic yards of cut and fill with 2,000,000 cubic yards crossing Alton Parkway. The limits of each grading phase are shown on Figure 5, *Phase 1 Grading Plan* and Figure 6, *Phase 2 Grading Plan*. Project grading is balanced onsite.

Each phase of grading will incorporate sufficient interim or permanent drainage facilities to support that phase until project build-out. The detention basin in PA 1K will be graded and constructed as part of the

Alton Parkway improvements by the City of Lake Forest. The basin will be available to treat runoff for both the interim and ultimate grading conditions for the project.

To balance the site's earthwork, soil must be moved across Alton Parkway. Different methods may be used to accomplish this, including temporary closures on Alton Parkway or constructing a temporary bridge or bridges across Alton for the use of earthmoving equipment. In accordance with the Development Agreement, the Lake Forest City Council shall determine the preferred method upon submittal of a Road Closure Plan by the developer.

Development

Grading Phase 1 would prepare the site for Development Phases 1A, 1B, and Phase 2. Grading Phase 2 would prepare the site for development Phases 3A and 3B. Development of infrastructure, recreational amenities and homes in Shea/Baker Ranch is anticipated to occur in three phases as shown in Figure 7, *Overall Project Phasing* (Exhibit 11-3). Each of these phases includes adequate roadway access, underground utility and service infrastructure, and recreation facilities to be self-supporting. Because forces beyond the control of the landowner influence the property's development, the timing and sequence of phasing may be adjusted pursuant to the Development Agreement. Project phasing is planned to commence along the southern and eastern sides of the project, transition to the center to complete Planning Area 1A, and finish within the project's center and northern side. The Shea/Baker Ranch Development Agreement (DA) established the timing for construction of certain improvements and satisfaction of certain obligations on the part of the developer. The timing for these occurrences is tied to the number of building permits issued.

1.3 EXISTING ZONING AND GENERAL PLAN

The site's existing General Plan land use designations consist of Mixed-Use (MU), Low Density Residential (LDR), Medium Density Residential (MDR), Low-Medium Density Residential (L-MDR) and Open Space (OS), as shown in Figure 8, *Existing Land Use Designations*. The site's zoning is Baker Ranch Planned Community (PC 7).

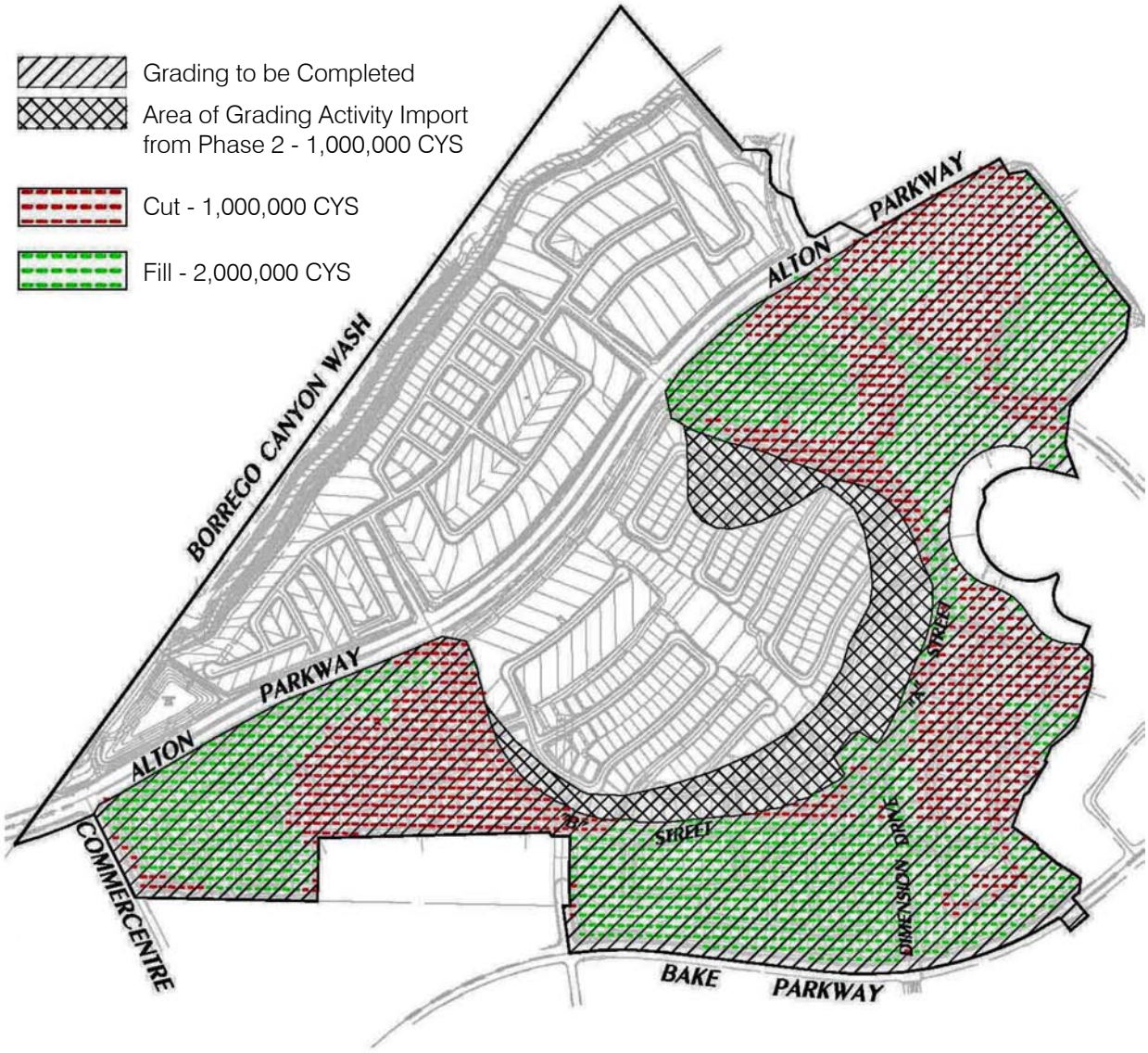
1.4 CITY ACTION REQUESTED

The applicant is seeking approvals for the implementation of the proposed project. The purpose of this Initial Study is to identify the potential impacts of the proposed project that should be addressed by the City's environmental review document, whether those impacts have been previously addressed in either the OSA PEIR or County of Orange's Alton Parkway Extension EIR, and the scope of any additional analysis to be included in the City's environmental review document.

The proposed project would require the following entitlements from the City of Lake Forest:

- Area Plan (AP 2-11-1732)
- Tentative Tract Map 16466

Phase I Grading Plan



Source: SBRA 2012

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Phase II Grading Plan

Notes:

- Phase 2 Grading Includes Borrego
- Approximately 2,000,000 CYS of Earth Will Cross Alton Parkway

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Source: SBRA 2012

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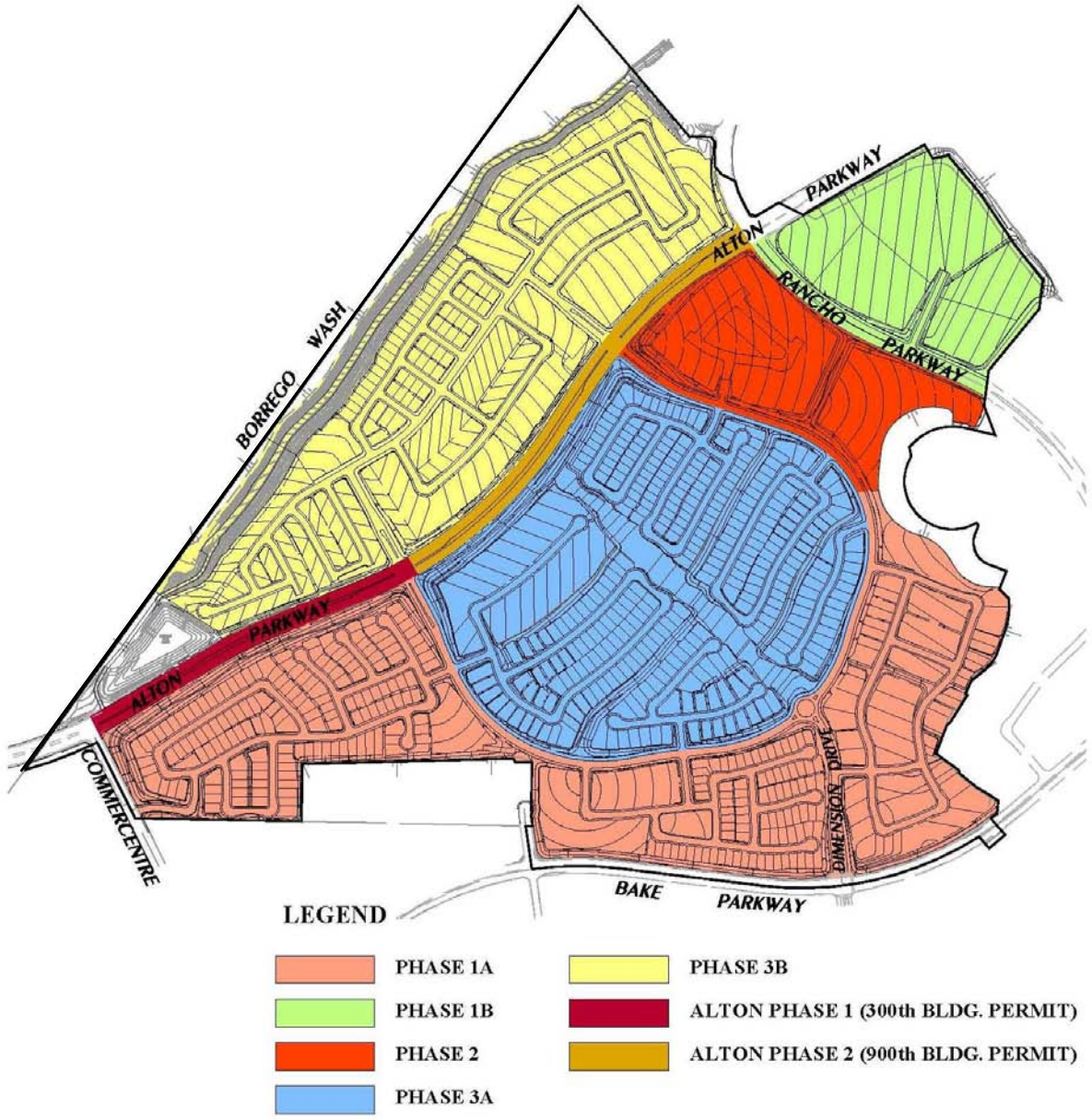
Overall Project Phasing



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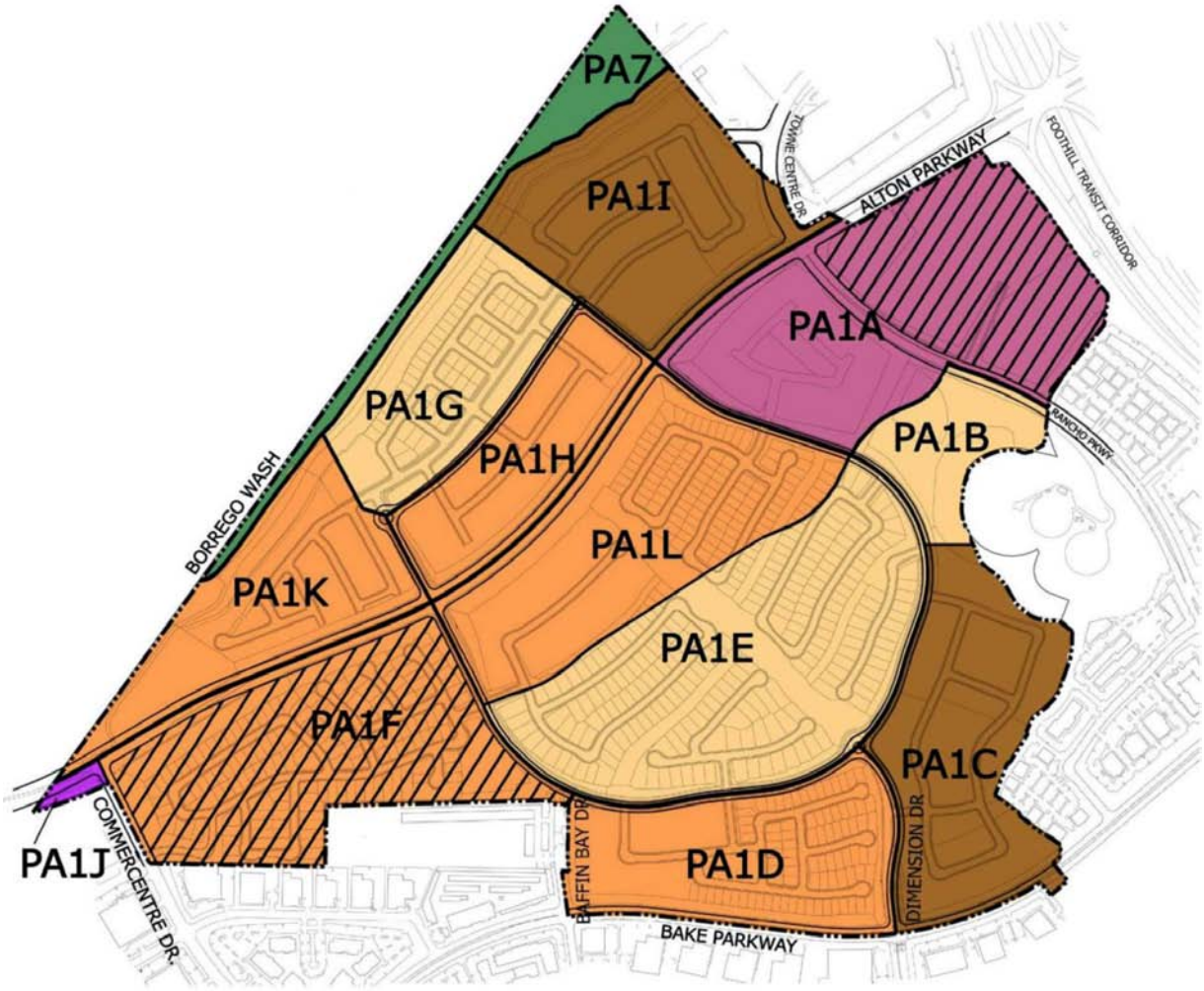
Existing Land Use Designations



LEGEND

- Mixed-Use
- Low Density Residential
- Low-Medium Density Residential
- Medium Density Residential
- Business Park
- Public Facilities Overlay

Planning Area	Land Use	Density Range[1]	Gross Acreage[2]
PA 1A	Mixed-Use	--	51.14
PA 1B	Low Density Residential	2-7 DU/AC	22.93
PA 1C	Medium Density Residential	15-25 DU/AC	22.82
PA 1D	Low-Medium Density Residential	7-15 DU/AC	30.13
PA 1E	Low Density Residential	2-7 DU/AC	56.38
PA 1F	Low-Medium Density Residential	7-15 DU/AC	44.37
PA 1G	Low Density Residential	2-7 DU/AC	22.45
PA 1H	Low-Medium Density Residential	7-15 DU/AC	20.29
PA 1I	Medium Density Residential	15-25 DU/AC	33.24
PA 1J	Business Park	--	1.05
PA 1K	Low-Medium Density Residential	7-15 DU/AC	24.96
PA 1L	Low-Medium Density Residential	7-15 DU/AC	40.29
PA 7	Open Space	--	15.70
		Total	**385.75**

1. All Planning Areas shall be developed at or below the maximum densities for the identified density range, and in accordance to Section VIII.B.14 of the Planned Community regulations.

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Source: SBRA 2012

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2. Environmental Checklist

2.1 BACKGROUND

1. **Project Title:** Shea/Baker Ranch Area Plan and Tentative Tract Map

2. **Lead Agency Name and Address:**
City of Lake Forest
25550 Commercentre Drive, Suite 100
Lake Forest, CA 92630

3. **Contact Person and Phone Number:**
Carrie Tai, AICP, Senior Planner
(949) 461-3466

4. **Project Location:** The 386.7-acre site is located in the northwestern portion of the City of Lake Forest. The project is bounded by Borrego Canyon Wash on the northwest, Bake Parkway and existing business park development on the south, the Foothill Transportation Corridor to the northeast, and an Irvine Ranch Water District reservoir site on the east.

5. **Project Sponsor's Name and Address:**
Shea/Baker Ranch Associates, LLC
1250 Corona Pointe Court, Suite 600
Corona, CA 92879

6. **General Plan Designation:** The site's existing General Plan land use designations consist of Mixed-Use (MU), Low Density Residential (LDR), Medium Density Residential (MDR), Low-Medium Density Residential (L-MDR), and Open Space (OS).

7. **Zoning:** Baker Ranch Planned Community (PC 7)

8. **Description of Project**: SBRA seeks City approval for an Area Plan (AP 2-11-1732) and Tentative Tract Map 16466 for a residential and mixed-use development consisting of 2,379 residential units and 25,000 square feet of commercial uses within the City of Lake Forest. **Surrounding Land Uses and Setting:** The site is located north of Bake Parkway, southeast of the Borrego Canyon Wash, between the 241 Toll Road and Commercentre Drive, within Area 1 of the Baker Ranch Planned Community and is generally surrounded by commercial development and undeveloped open space.

9. **Other Public Agencies Whose Approval Is Required** (e.g., permits, financing approval, or participation agreement):
Orange County Flood Control District
Army Corps of Engineers
Santa Ana Regional Water Quality Control Board
U.S. Fish and Wildlife Service
California Department of Fish and Game
Orange County Fire Authority

2.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

NEW INFORMATION OF SUBSTANTIAL IMPORTANCE, WHICH WAS NOT KNOWN AND COULD NOT HAVE BEEN KNOWN WITH THE EXERCISE OF REASONABLE DILIGENCE AT THE TIME OF THE PREVIOUS EIR, SHOWS THAT THE PROJECT WILL HAVE ONE OR MORE SIGNIFICANT EFFECTS NOT DISCUSSED IN THE PREVIOUS EIR. The subject areas checked below were determined to be new significant environmental effects or to be previously identified effects that have a substantial increase in severity either due to a change in project, change in circumstances or new information of substantial importance, as indicated by the checklist and discussion on the following pages.

☐ Aesthetics	☐ Agricultural and Forest Resources	☒ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☒ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Utilities / Service Systems	☒ Mandatory Findings of Significance

2.3 DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

☐ No substantial changes are proposed in the project and there are no substantial changes in the circumstances under which the project will be undertaken that will require major revisions to the previous approved ND or MND or certified EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. Also, there is no "new information of substantial importance" as that term is used in CEQA Guidelines Section 15162(a)(3). Therefore, the previously adopted ND or MND or previously certified EIR is adequately discusses the potential impacts of the project without modification.

☐ No substantial changes are proposed in the project and there are no substantial changes in the circumstances under which the project will be undertaken that will require major revisions to the previous approved ND or MND or certified EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. Also, there is no "new information of substantial importance" as that term is used in CEQA Guidelines Section 15162(a)(3). Therefore, the previously adopted ND, MND or previously certified EIR adequately discusses the potential impacts of the project; however, minor changes require the preparation of an ADDENDUM.

☐ Substantial changes are proposed in the project or there are substantial changes in the circumstances under which the project will be undertaken that will require major revisions to the previous ND, MND or EIR due to the involvement of significant new environmental effects or a substantial increase in the severity of previously identified significant effects. Or, there is "new information of substantial importance," as that term is used in CEQA Guidelines Section 15162(a)(3). However all new potentially significant environmental effects or substantial increases in the severity of previously identified significant effects are clearly reduced to below a level of significance through the incorporation of mitigation measures agreed to by the project applicant. Therefore, a SUBSEQUENT MND is required.

☒ Substantial changes are proposed in the project or there are substantial changes in the circumstances under which the project will be undertaken that will require major revisions to the previous

environmental document due to the involvement of significant new environmental effects or a substantial increase in the severity of previously identified significant effects. Or, there is "new information of substantial importance," as that term is used in CEQA Guidelines Section 15162(a)(3). However, only minor changes or additions or changes would be necessary to make the previous EIR adequate for the project in the changed situation. Therefore, a SUPPLEMENTAL EIR is required.

☐ Substantial changes are proposed in the project or there are substantial changes in the circumstances under which the project will be undertaken that will require major revisions to the previous environmental document due to the involvement of significant new environmental effects or a substantial increase in the severity of previously identified significant effects. Or, there is "new information of substantial importance," as that term is used in CEQA Guidelines Section 15162(a)(3) such as one or more significant effects not discussed in the previous EIR. Therefore, a SUBSEQUENT EIR is required.

Signature	*Date*
Printed Name	*For*

2.4 EVALUATION OF ENVIRONMENTAL IMPACTS

The environmental impacts of developing the Shea/Baker Ranch project site were previously analyzed in the OSA PEIR and Addendum as "Site 1", and mitigation measures were adopted to reduce the significant impacts. For those impacts that were determined to be unavoidable and adverse (air quality, aesthetics and GHG), the City adopted a Statement of Overriding Considerations.

2.4.1 CEQA Requirements

Section 21166 of CEQA and Section 15162 of the CEQA Guidelines provide guidance with respect to when a subsequent or supplement to a prior certified EIR is required for a later project. The presumption is that "When an environmental impact report has been prepared for a project pursuant to this division, no subsequent or supplemental environmental impact report shall be required by the lead agency or by any responsible agency, unless one or more of the following events occurs:

> (a) Substantial changes are proposed in the project which will require major revisions of the environmental impact report.
>
> (b) Substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions in the environmental impact report.
>
> (c) New information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available and shows that the project will have one or more significant effects not discussed in the previous environmental impact report.

The City undertook analysis of the proposed Shea/Baker Ranch project and evaluated it against the standards set forth in 21166 and 15162 and determined pursuant to Section 15162(c) that a supplement should be prepared because new information of substantial importance which was not known and could not have been known with the exercise of reasonable diligence at the time of the previous EIR was certified as complete shows that the project will have one or more significant effects not discussed in the previous EIR. Since the certification of the OSA PEIR and Addendum for Shea/Baker Ranch DA, new information in the form of new air emission thresholds, and project-specific information regarding construction air emissions and project GHGs has been developed. This level of detail was not previously known at the time the OSA PEIR was prepared and certified. This new information identifies significant effects in the areas of Air Quality and Global Climate Change not discussed in the prior OSA PEIR which require discussion in a supplement to the OSA PEIR and Addendum. This Initial Study reviews all of the other environmental impacts and sets forth the analysis as to why none of the criteria set forth in 21166 and 15162 are triggered by those impacts, and why the focus of the supplement will be limited to a discussion of Air Quality and Global Climate Change.

2.4.2 Scope of Subsequent Analysis

The "scope" of the review for project-related impacts for this Initial Study is limited to changes between the original project and the requested modifications to the proposed project. The requested modifications have been reviewed against the analysis of impacts in the previously-certified EIR which include application of the mitigation measures adopted in connection with the OSA PEIR to the proposed project. This Initial Study also examines the project in light of any changes in circumstances, or new information and whether they result in new significant impacts not previously analyzed in the prior certified EIR, or substantially increase the severity of impacts previously analyzed in the prior certified EIR. As appropriate, this Initial Study includes

updated information with respect to implementation of the approved Alton Parkway Extension described in the Alton Parkway Extension EIR (SCH 2002121105).

After careful consideration of the potential environmental impacts of the proposed Shea/Baker Ranch project, the City of Lake Forest finds a Supplemental EIR is appropriate pursuant to Section 15162(a)(3)(A) in that new information of substantial importance which was not known and could not have been known with the exercise of reasonable diligence at the time of the previous EIR was certified shows that the project will have one or more significant effects not discussed in the previous EIR. The basis for these findings are listed in Section 2, *Environmental Checklist*, and are explained in Section 3, *Environmental Analysis*.

2.4.3 CEQA Document Tiering

The Public Resources Code and the CEQA Guidelines discuss the use of "tiering" environmental impact reports by lead agencies. Public Resources Code Section 21068.5 defines "tiering" as:

> "The coverage of general matters and environmental effects in an environmental impact report prepared for a policy, plan, program or ordinance followed by narrower or site specific environmental impact reports which incorporate by reference the discussion in any prior environmental impact report and which concentrate on the environmental effects which: (a) are capable of being mitigated, or (b) were not analyzed as significant effects on the environment in the prior environmental impact report."

Tiering is a method to streamline EIR preparation by allowing a Lead Agency to focus on the issues that are ripe for decision and exclude from consideration issues already decided or not yet ready for decisions (CEQA Guidelines Sections 15152 and 15385). According to CEQA Guidelines Section 15152 (a), "tiering" is defined as:

> "Tiering refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project."

According to CEQA Guidelines Section 15385: "Tiering is appropriate when the sequence of EIRs is (a) from a general plan, policy, or program EIR to a program, plan, or policy EIR of a lesser scope or to a site-specific EIR . . . ."

The concept of tiering anticipates a multi-tiered approach to preparing EIRs. The first-tier EIR covers general issues in a broader program-oriented analysis, including important program resource and mitigation commitments required to be implemented at the project-level. Subsequent tiers incorporate by reference the general discussions from the broader document, concentrating on the issues specific to the proposed action being evaluated (CEQA Guidelines Section 15152).

2.4.4 Incorporation by Reference

This Initial Study incorporates by reference all or portions of the OSA PEIR and the technical documents that relate to the proposed project or provide additional information concerning the environmental setting of the proposed project. The information disclosed in this Initial Study is based on the following technical studies and/or planning documents:

- City of Lake Forest General Plan (2010)

- City of Lake Forest Zoning Ordinance
- City of Lake Forest Noise Ordinance
- City of Lake Forest Retaining Wall Design Guidelines
- OSA PEIR and certifying resolutions and findings
- Addendum to OSA PEIR 2010
- Alton Parkway Extension EIR and Appendices (SCH 2002121105)
- City of Lake Forest CEQA Significance Thresholds Guide, dated November 20, 2001 (revised March 2009)
- Technical studies, personal communications and web sites listed in Section 4, *References*

The documents are available for review at the Development Services Department, located at 25550 Commercentre Drive, Suite 100, Lake Forest, CA 92630.

2.4.5 Terminology Used in the Checklist

This Initial Study reviews the differences between the Shea/Baker Ranch project and the previously approved Site 1 project described in the certified OSA PEIR. The following terminology is used in determining the project-related impacts:

1) A finding of "No New Impact/No Impact" means that the potential impact was fully analyzed and/or mitigated in the prior CEQA document and no new or different impacts will result from the proposed activity. A brief explanation is required for all answers except "No New Impact/No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No New Impact/No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No New Impact/No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) A finding of "New Mitigation is Required" means that the project have a new potentially significant impact on the environment or a substantially more severe impact than analyzed in the previously approved or certified CEQA document and that new mitigation is required to address the impact.

3) A finding of "New Potentially Significant Impact" means that the project may have a new potentially significant impact on the environment or a substantially more severe impact than analyzed in the previously approved or certified CEQA document that cannot be mitigated to below a level of significance or be avoided.

4) A finding of "Reduced Impact" means that a previously infeasible mitigation measure is now available, or a previously infeasible alternative is now available that will reduce a significant impact identified in the previously prepared environmental document.

5) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

6) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analyses Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis. Describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the proposed action.

c) Infeasible Mitigation Measures. Since the previous EIR was certified or previous ND or MND was adopted, discuss any mitigation measures or alternatives previously found not to be feasible that would in fact be feasible or that are considerably different from those previously analyzed and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternatives.

d) Changes in Circumstances. Since the previous EIR was certified or previous ND or MND was adopted, discuss any changes in the project, changes in circumstances under which the project is undertaken and/or "new information of substantial importance" that cause a change in conclusion regarding one or more effects discussed in the original document.

7) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

8) Supporting Information Sources. A source list should be attached and other sources used or individuals contacted should be cited in the discussion.

Issues	*New Potentially Significant Impact*	*New Mitigation is Required*	*No New Impact/No Impact*	*Reduced Impact*
I. AESTHETICS. Would the project:				
a) Substantially damage scenic resources, including scenic vistas from public parks and views from designated scenic highways or arterial roadways?			X	
b) Create a new source of substantial night lighting that would result in “sky glow” (i.e. illumination of the night sky in urban areas) or “spill light” (i.e. light that falls outside of the area intended to be lighted) onto adjacent sensitive land uses?			X	
c) Create a new source of substantial glare which would adversely affect daytime visibility and/or views in the area?			X	
d) Substantially degrade the existing visual character or quality of the site and its surroundings where: • The project exceeds the allowed height or bulk regulations, or exceeds			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
the prevailing height and bulk of existing structures. • The project is proposed to have an architectural style or to use building materials that will be in vivid contrast to an adjacent development where that development had been constructed adhering to a common architectural style or theme; • The project is located on a visually prominent site and, due to its height, bulk, architecture or signage, will be in vivid contrast to the surrounding development or environment degrading the visual unity of the area. • A project would include unscreened outdoor uses or materials. • A project would result in the introduction of an architectural feature or building mass that conflicts with the character of the surrounding development.				
II. AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?			X	
d) Result in the loss of forest land or conversion of forest land to non-forest use?			X	
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
III. AIR QUALITY. **Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:**				
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation, including the SCAQMD construction and operational emission thresholds (identified in Table 4-3 of the City of Lake Forest CEQA Significance Threshold Guide)?	X			
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) where the incremental effect of the project emissions, considered together with past, present, and reasonably anticipated further project emissions, increase the level of any criteria pollutant above the existing ambient level?	X			
d) Expose sensitive receptors to substantial pollutant concentrations based on SCAQMD local impact methodologies, including but not limited to Local Significance Thresholds and thresholds for $PM_{2.5}$?	X			
e) Create objectionable odors affecting a substantial number of people?			X	
IV. BIOLOGICAL RESOURCES. **Would the project:**				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			X	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d) Interfere substantially with the movement of any native resident or migratory fish or			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?			X	
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?			X	
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	
d) Disturb any human remains, including those interred outside of formal cemeteries?				
VI. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:			x	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?			X	
VII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	X			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	X			
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?			X	
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
intermixed with wildlands?				
IX. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
b) Create or contribute runoff water which would exceed the capacity o existing or planned stormwater drainage systems.			X	
c) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			X	
d) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			X	
e) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			X	
f) Cause inundation by seiche, tsunami, or mudflow?			X	
g) Deposit sediment and debris materials within existing channels obstructing flows?			X	
h) Exceed the capacity of a channel and cause overflow during design storm conditions.			X	
i) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	
j) Adversely change the rate, direction, or flow of groundwater?			X	
k) Have an impact on groundwater that is inconsistent with a groundwater management plan prepared by the water agencies with the responsibility for groundwater management.			X	
l) Violate any water quality standards or waste discharge requirements?			X	
m) Cause a significant alteration of receiving water quality during or following construction			X	
n) Substantially degrade groundwater quality?			X	
o) Substantially alter the existing drainage pattern of the site or area, including through			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site.				
p) Create or contribute runoff water which would generate provide substantial additional sources of polluted runoff?			X	
q) Substantially degrade water quality by discharge which affects the beneficial uses (i.e. swimming, fishing, etc.) of the receiving or downstream waters?			X	
r) Increase in any pollutant for which the receiving water body is already impaired as listed on the Clean Water Act Section 303(d) list.			X	
X. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?			X	
b) Substantially conflict with existing on-site or adjacent land use due to project-related significant unavoidable indirect effects (e.g., noise, aesthetics, etc) that preclude use of the land as it was intended by the General Plan.			X	
c) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
d) Conflict with the Central and Coastal Natural Communities Conservation Program/Habitat Conservation Plan (NCCP/HCP) of which the City of Lake Forest is a participant.			X	
XI. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?			X	
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			X	
XII. NOISE. Would the project result in:				
a) Generate traffic that would cause a noise level increase of 3dB or more on a roadway segment adjacent to a noise sensitive land use, which include, but are not limited to residential (single-family, multi-family, mobile home), hotels, motels, nursing homes, hospitals, parks, playgrounds, and recreation areas, and schools?			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
b) Exposure of persons to or generation of stationary noise levels in excess of standards established by the City of Lake Forest as specified by the exterior noise standards set fourth in the Noise Control Chapter of the Lake Forest Municipal Code?			X	
c) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
d) A substantial permanent increase in "future with project" ambient noise levels for sensitive land uses (identified in the City of Lake Forest General Plan Table 3-1 in Section 3.3, Interior and Exterior Noise Standards) in the project vicinity above levels existing without the project?			X	
e) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
f) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	
g) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			X	
XIII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			X	
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			X	
XIV. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?			X	
d) Parks?			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
e) Other public facilities?			X	
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	
XVI. TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			X	
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			X	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?			X	
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e) Result in inadequate emergency access?			X	
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.			X	
g) Cause the ICU (intersection capacity utilization) values at intersections, with the proposed project, to exceed the City of Lake Forest performance criteria as specified in Table C-3 of the General Plan Circulation Element?			X	
h) Include design features or uses that may cause traffic hazards such as sharp curves,			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
tight turning radii from streets, limited roadway visibility, short merging lanes, uneven road grades, or any other conditions determined by the City traffic engineer to be a hazard?				
i) Provide less parking than required, applying the standards found in the City of Lake Forest Municipal Code?			X	
XVII. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed waste water treatment requirements of the applicable Regional Water Quality Control Board?			X	
b) Require or result in the construction of new water or waste water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?			X	
e) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g) Comply with federal, state, and local statutes and regulations related to solid waste?			X	
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
b) Does the project have impacts that are individually limited, but cumulatively	X			

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)				
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

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3. Environmental Analysis

Section 2.4 provided a checklist of environmental impacts. This section provides an evaluation of the impact categories and questions contained in the checklist.

The development footprint of the proposed project is within the footprint of development onsite as proposed in the OSA PEIR. The development intensity of the proposed project is substantially less than that proposed in the OSA PEIR, as described below in Table 3-1.

Table 3-1
Proposed Project Compared to Development of Site No. 1 as Proposed in OSA PEIR

	Proposed Project	*Development as Proposed in OSA PEIR*	*Difference: Proposed Project compared to Development Proposed in OSA PEIR*	
			Total	*Percent*
Residential Units	2,379	2,815	(436)	(15.5)
Commercial Use, Square Feet	25,000	320,000	(295,000)	(92.2)
Parks and Open Space	Over 100 acres	51 acres	Over 49 acres	Over 196

3.1 AESTHETICS

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to aesthetics:

PPP AESTH-1 (*OAS PEIR MMRP Aesthetics Standard Condition*) Compliance with Municipal Code and applicable Planned Community text documents to ensure that height, bulk, architecture and/or signage will comply with code requirements.

PPP AESTH-2 (*OAS PEIR MMRP Aesthetics Landscaping Standard Condition LS1*) Prior to the issuance of a building permit, the applicant shall submit to the Director of Development Services for review and approval a precise landscape and irrigation construction plan prepared by a licensed landscape architect for the project consistent with the conceptual landscape plans approved by the Planning Commission.

PPP AESTH-3 (*OAS PEIR MMRP Aesthetics Landscaping Standard Condition LS2*) Prior to the issuance of a certificate of use and occupancy for the project, the applicant shall have installed landscaping and irrigation in accordance with the approved plan. The applicant shall submit a landscape installation verification letter to the Director of Development Services from a licensed landscape architect indicating that the landscaping for the project was installed in accordance with the approved plan.

PPP AESTH-4 (*OSA PEIR MMRP Aesthetics Light and Glare Standard Condition of Approval LG1*) Prior to approval of an SDP, the applicant shall submit a photometric survey for the site. In

addition, the applicant shall provide a note on the lighting plans that states no direct lighting spillage shall be permitted to shine on any other property. The proposed lighting standards shall be hooded or shielded to focus the light downward. A Certificate of Occupancy shall not be issued until the lighting has been reviewed and approved by the Director of Development Services.

PPP AESTH-5 (*OSA PEIR MMRP Aesthetics Mechanical Equipment Standard Conditions of Approval ME2*) Prior to issuance of a certificate of occupancy, the applicant shall insure that mechanical equipment placed on any roof such as, but not limited to, air conditioning, heating, ventilating ducts and exhaust fans shall be screened from view through the use of approved roof screens, recessed roof wells and/or use of the building parapets.

PPP AESTH-6 (*OSA PEIR MMRP Aesthetics Model Home Complex Standard Condition of Approval: MHC1*) Within 60 days after the termination of the use of the subject property as a model home/sales complex, the parking lot and temporary fencing shall be removed or revised as necessary to comply with the current applicable zoning regulations. Within six months following the removal of the parking lot improvement and trailer, the lots upon which the parking lot and trailer were situated shall be either planted with grass or improved with dwellings.

a) Substantially damage scenic resources, including scenic vistas from public parks and views from designated scenic highways or arterial roadways?

No New Impact. The overall aesthetic impact of the modified project would be similar to the impact of the project approved by the OSA PEIR.

The Shea/Baker Ranch project site is located north of Bake Parkway, southeast of the Borrego Canyon Wash, between the 241 Toll Road and Commercentre Drive. The project site is generally surrounded by business park development and undeveloped open space. The commercial areas of the Foothill Ranch Planned Community are located to the north and northeast of Shea/Baker Ranch, immediately north of the 241 Toll Road. Existing business park developments, including Pacific Commercentre, are located at the northwestern edge and east and south of the site. The former MCAS El Toro is located west of the project site. A large portion of the area, which is still under federal agency control, consist of regionally significant open space and is part of the County of Orange's NCCP. Existing Irvine Ranch Water District (IRWD) water reservoirs are located on a hill along the eastern edge of the community. Adjacent roads include Bake Parkway, Commercentre Drive, Towne Centre Drive, Rancho Parkway and future Alton Parkway.

The project site is an irregular shaped, approximately 387-acre, property that is partially graded. The site is undeveloped except for a number of small structures (sales office, storage and two residences) related to a nursery that occupies the northwestern portion. There is also an approximately 13-acre paved area used primarily for recreational vehicles, north of Bake Parkway and west of Baffin Bay Drive. Work is ongoing for the extension of Alton Parkway between Towne Centre Drive on the northeast, through the site, and connecting to Irvine Boulevard to the west.

The overall topography in the vicinity of the site slopes to the southwest. The total topographic relief within the project site is nearly 290 feet, ranging from a high elevation of 860 feet above Mean Sea Level (MSL) in the northeastern portion of the site to a low elevation of 570 feet above MSL in the southwestern portion of the site. There are many manmade features within the site, the majority of which are associated with past citrus farming operations and current nursery activities. These features include two ranch houses, greenhouses, a maintenance yard, and the nursery operations office. There is an extensive dirt road network

throughout the site and some outlet electric lines. The current nursery operation is located on the Borrego terrace on the site's northwestern boundary. Irrigation systems including pumps, lines, and windmills are present throughout the parcel. Numerous fences and gates bisect the parcel.

Scenic resources are undisturbed, as are unique vistas, natural or undisturbed areas, or officially recognized areas. There are no scenic or historic resources onsite. The County of Orange and California Department of Transportation (Caltrans) designate roadways that provide scenic views as official scenic highways or corridors (Caltrans 1996). The County of Orange Master Plan of Scenic Highways designates Santiago Canyon Road and El Toro Road (between Santa Margarita Parkway and Live Oak Canyon Road) as scenic routes. These scenic routes, while within the City, are not located in close proximity to the site such that current views experienced from these roadways would be affected by any development that would occur on the project site. The proposed project is not located near a designated state scenic highway or adjacent to local freeways or roadways that are designated or eligible scenic roadway (Caltrans 2003). Although mostly undeveloped and visible from Bake Parkway, nearly half of the site is rough graded. There are no natural rock outcroppings onsite. The great majority of trees onsite (eucalyptus and avocado) are unmaintained and in poor condition or dead. They are typical of ornamental vegetation in urban areas and are not scenic resources.

There are no public parks on or next to the site. The nearest park to the site is Limestone Canyon Regional Park, about 0.4 mile north and opposite Toll Road 241 from the site. Thus, project development would not damage scenic vistas from public parks. Although Bake Parkway is designated as a Primary Arterial (Four-lane divided roadway) by the City of Lake Forest, no scenic resources exist onsite. Therefore, there are no impacts to scenic resources, including, but not limited to, trees, rock outcrops, and scenic vistas within a state scenic highway, arterial roadway or park.

The overall development and would not increase impacts to scenic vistas in comparison to the project analyzed in the OSA PEIR. The OSA PEIR found Site 1 impacts to be less than significant and impacts would remain less than significant. Therefore, no new significant impacts damaging scenic resources would occur as a result of the modified project or as a result of changed circumstances.

b) Create a new source of substantial night lighting that would result in "sky glow" (i.e. illumination of the night sky in urban areas) or "spill light" (i.e. light that falls outside of the area intended to be lighted) onto adjacent sensitive land uses.

No New Impact.

There are two primary sources of light: light emanating from building interiors that pass through windows and light from exterior sources (e.g., street lighting, parking lot lighting, building illumination, security lighting, and landscape lighting). Depending upon the location of the light source and its proximity to adjacent light sensitive uses, light introduction can be a nuisance, affecting adjacent areas and diminishing the view of the clear night sky. Light spillage is typically defined as unwanted illumination from light fixtures on adjacent properties. Perceived glare is the unwanted and potentially objectionable result from looking directly into a light source of a luminary. Sensitive uses (e.g., residential uses) surrounding the project site could be impacted by the light and glare from development within the boundaries of project site.

The OSA PEIR determined that the overall project is expected to include typical street lighting at levels of 1 to 3 foot-candles. This level of lighting is unobtrusive and typically considered a less than significant impact. However, because at the time the City had an adopted threshold, which considered outdoor illumination of more than 1¼ foot-candles to be significant, the impact had to be considered significant. MM 3.1-1 through MM 3.1-4 were incorporated to help reduce the impact, however, because the mitigation measures proposed

would not reduce outdoor lighting to a level less than the City's stated threshold of significance of 1¼ foot-candles between dusk and dawn, this impact would be significant and unavoidable. Since certification of the OSA PEIR, the City's threshold has been eliminated. However, mitigation measures 3.1-1 through 3.1-4 were included to minimize nighttime lighting impacts. Mitigation measures 3.1-1 through 3.1-4 require projects developed pursuant to the OSA PEIR to submit a lighting plan to the City of Lake Forest Development Services Department for review and approval; to position, aim, and shield outdoor lighting, including signage, so as to minimize spill light onto adjacent residential properties; and to comply with City of Lake Forest Municipal Code and applicable Planned Community guidelines.

The analysis for OSA PEIR Site 1 assumed 2,815 maximum dwelling units and 320,000 square feet of commercial on the Shea/Baker Ranch property. The proposed project reduces intensity to a maximum of 2,379 units and 25,000 square feet of commercial uses. Therefore, the proposed project reduces intensity of development compared with development of the site analyzed in the OSA PEIR. Night lighting impacts were identified as significant and unavoidable in the OSA PEIR. In addition, the Shea/Baker Area Plan incorporates lighting guidelines and states that all lighting shall be non-obtrusive, as follows:

- All exterior lighting shall be limited to the minimum necessary for safety;
- All exterior lighting shall be shielded to minimize glare and light spill on adjacent properties;
- All exterior entry lights visible from the street shall complement the architectural style; and
- In common areas, low voltage lighting should be used whenever possible and be on photocells or times.

The land uses of the modified project would not introduce new or substantially greater light sources when compared to the analysis for OSA PEIR Site 1. OSA PEIR mitigation measures would be implemented for the proposed project. Therefore, no new significant night lighting impacts are expected.

Applicable OSA PEIR Mitigation Measures

The following mitigation measures (3.5-1 through 3.5-4) are taken directly from the OSA PEIR. Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed Shea/Baker Ranch project.

AE MM-1 (OSA Program EIR Mitigation Measure 3.1-1) Prior to issuance of a **precise** grading permit for the project, the applicant shall submit a lighting plan to the Development Services Department for review and approval. The plan shall specify the lighting type and placement to ensure that the effects of security lighting are limited as a means of minimizing night lighting and the associated impacts to aesthetics. Prior to completion of final plans and specifications, the City of Lake Forest shall review the plans and specifications to ensure that all light fixtures will use glare-control visors, arc tube suppression caps, and will use a photometric design that maintains 70 percent of the light intensity in the lower half of the light beam. Completion of this measure shall be monitored and enforced by the City of Lake Forest.

AE MM-2 (OSA Program EIR Mitigation Measure 3.1-2) All lighting and advertising (including signage) shall be oriented in such a manner to reduce the amount of light shed onto adjacent residential development and incorporate "cut-off" shields as appropriate to minimize any increase in lighting at adjacent residential properties.

AE MM-3 (OSA Program EIR Mitigation Measure 3.1-3) All interior floodlights, exterior parking lot, and other security lighting shall be directed away from adjacent uses and towards the specific location intended for illumination. State-of-the-art fixtures shall be used, and all lighting shall be

shielded to minimize the production of glare and light spill onto both existing and proposed residential units. A lighting design plan shall be submitted to the City for approval ~~at the time of building permit~~ **prior to** issuance **of precise grading permits** for each specific development project.

AE MM-4 (OSA Program EIR Mitigation Measure 3.1-4) Landscape illumination and exterior sign lighting shall follow the City's Municipal Code and applicable Planned Community design guidelines and be accomplished with low-level unobtrusive fixtures.

c) Create a new source of substantial glare which would adversely affect daytime visibility and/or views in the area.

No New Impact. Glare could occur from building materials of the new structures including glass, concrete, stucco, wood, core-ten steel, and other materials compliant with applicable City design guidelines and architectural standards. The anticipated building materials and proposed uses described in the Shea/Baker Area Plan are typical of those found in the surrounding areas and are not anticipated to create unusual or isolated glare effects. The use of extensive landscaping along roadways would avoid some glare effects to motorists. Chapter 6 of the Area Plan provides architectural guidelines, including preferred materials. The proposed project is not expected to create unusual or isolated glare impacts since the buildings would be constructed of materials such as stucco and wood that provide for minimal glare potential. The use of neon or glare-generating materials is not proposed. Impacts would be less than significant. Glare impacts were identified as less than significant in the OSA PEIR. Therefore, the proposed project would not generate new glare impacts compared to the analysis in the certified OSA PEIR.

d) Substantially degrade the existing visual character or quality of the site and its surroundings where:

- The project exceeds the allowed height or bulk regulations, or exceeds the prevailing height and bulk of existing structures.
- The project is proposed to have an architectural style or to use building materials that will be in vivid contrast to an adjacent development where that development had been constructed adhering to a common architectural style or theme;
- The project is located on a visually prominent site and, due to its height, bulk, architecture or signage, will be in vivid contrast to the surrounding development or environment degrading the visual unity of the area.
- A project would include unscreened outdoor uses or materials.
- A project would result in the introduction of an architectural feature or building mass that conflicts with the character of the surrounding development.

No New Impact.

The project's location and surrounding land uses are discussed in Section 3.1a above. Implementation of the proposed project would alter the existing visual character of the project site. The native and nonnative species of trees, shrubs, and grass located on the site would be removed and replaced with a master-planned community consisting of 2,379 residential units, a maximum of 25,000 square feet of commercial development, over 100 acres of parks and open space, and associated infrastructure (i.e., streets, utilities). Photographic simulations were prepared to assist in assessing the potential significance of the change in visual character of the site and its surroundings. These photographs were taken from public offsite locations, where the project site is most visible. Figure 9, *Photograph Location Map* provides a map of these view points. Figure 10, *Commercentre Drive looking towards Alton Parkway,* is a snap shot of the existing and

proposed view from the southwest corner of the project site (along Commercentre Drive) looking north toward the project site. Figure 11, *Baffin Bay Drive from Bake Parkway,* provides a snap shot of the existing and proposed view of the southern edge of the project site (at the intersection of Bake Parkway and Baffin Bay Drive) looking north toward the project site. Figure 12, *Dimension Drive at Bake Parkway,* depicts the existing and proposed intersection of Bake Parkway and Dimension Drive, looking north toward the project site. Figure 13, *Rancho Parkway looking towards Alton Parkway*, provides an existing view of the terminus of Rancho Parkway and depicts the extension of Rancho Parkway through the project site. *Alton Parkway looking west from the Rancho Parkway Intersection,* provided as Figure 14, depicts the extension of Alton Parkway through the northeastern portion of the project site (from the intersection of Rancho Parkway and Alton Parkway) looking southwest. Finally, Figure 15, *Retail component at SE Corner of Alton Parkway and Rancho Parkway Intersection*, provides a snapshot of the exiting and proposed intersection of Alton Parkway and Rancho Parkway (looking southeast along Alton Parkway).

In comparing the existing views and proposed views photographs, the visual simulations show that the residential uses would be visible from all area roadways. Views of natural vegetation, hillside topography and rough graded hillsides would be replaced with residences, parks and ornamental landscaping. The existing hillside topography of the site would be altered but the residences located nearest area roadways would be set back from the roadway to minimize the overall visual effects of the residential buildings.

Retaining walls proposed near Commercentre Drive would be buffered by extensive landscaping provided along the slope area between the residences and the roadway and shall comply with Lake Forest's *Retaining Wall Design Guidelines*, approved by the City Council on June 15, 2010. The objective of the Guidelines is to ensure that proposed retaining walls are constructed in an aesthetically pleasing and high quality manner that fits within the character of the community.

The proposed residential and mixed-uses would be visible from the adjacent existing business park developments, including Pacific Commercentre (east and south of the site) and the commercial areas of the Foothill Ranch Planned Community (north and northeast of the site). However, the project proposes both onsite and offsite landscaping that would provide a visual buffer between the proposed development and the existing development. The use of this extensive landscaping along the project site boundaries and within the interior of the site would soften the visual character of the proposed master-planned community. While the proposed architectural style of residential uses differs slightly from the surrounding business park developments, it would not be in vivid contrast or direct conflict with the overall character of the area. Lastly, with approval of the tentative tract map and area plan the proposed project would be consistent with the City of Lake Forest zoning requirements and development standards relative to the height and bulk of the project. Therefore, the proposed project would not substantially degrade the existing visual character or quality of the project site and its surroundings.

Impacts to the visual character of the site and surrounding areas of development of the project site (Site No. 1) were found to be less than significant in the OSA PEIR. However, the project grading plan was developed after the OSA PEIR was certified, and the project site plan has changed since certification of the OSA PEIR. The proposed project eliminates 436 residential units, 295,000 square feet of commercial uses, and provides approximately 51 additional acres of parks and open space. The project's visual overall impact is less than or similar to the project analyzed in the certified OSA PEIR. Impacts would therefore remain less than significant and there would be no new significant impacts as a result of the proposed project.

Photograph Location Map

Source: William Hezmalhalch Architects 2011

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Commercentre Drive looking towards Alton Parkway

1 Existing view along Commercentre Drive terminating at Alton Parkway.

1 Conceptual view along Commercentre Drive terminating at Alton Parkway.

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Baffin Bay Drive from Bake Parkway

❷ Existing view along Baffin Bay Drive.

❷ Conceptual view along Baffin Bay Drive.

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Dimension Drive at Bake Parkway

3 Existing view along Dimension Drive.

3 Conceptual view along Dimension Drive.

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Rancho Parkway looking towards Alton Parkway

4 Existing view along Rancho Parkway.

4 Conceptual view along Rancho Parkway.

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Alton Parkway looking west from the Rancho Parkway Intersection

5 Existing view along Alton Parkway at Rancho Parkway.

5 Conceptual view along Alton Parkway at Rancho Parkway.

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Retail Component at SE Corner of Alton Parkway and Rancho Parkway Intersection

6 Existing view along Rancho Parkway at Alton Parkway.

6 Conceptual view along Rancho Parkway at Alton Parkway.

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3.2 AGRICULTURE AND FOREST RESOURCES

Information in this section is based in part on the following technical reports:

- *Baker Ranch Tree Assessment Report, City of Lake Forest, California*, Dudek, March 2011

A copy of the study is included in the Technical Appendices to this Initial Study (Appendix A)

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The project site contains 80.1 acres of Unique Farmland and 3.1 acres of Prime Farmland (DLRP 2009). The OSA PEIR identified 432 acres of Prime Farmland and Unique Farmland on two of the seven sites analyzed that would be converted to non-agricultural uses. The entire 387-acre Shea/Baker Ranch project site was included in the 432 acres. Since preparation of the OSA PEIR, 303.8 acres of the proposed project site have been re-mapped as Grazing Land, Other Land, and Urban and Built-Up Land; none of these three mapping categories are considered Important Farmland (DLRP 2009). The OSA PEIR determined impacts to mapped farmland to be significant and unavoidable. The OSA PEIR included a Statement of Overriding Considerations regarding these impacts. Where a Lead Agency has previously adopted a Statement of Overriding Considerations for impacts to mapped farmland, and the project (in this case, Site 1 of the seven sites analyzed in the certified PEIR) has not changed since that adoption, then the finding of a Significant and Unavoidable Impact, and the Statement of Overriding Considerations, still apply to the project. Thus, no further analysis of impacts to mapped farmland is needed. No additional impact would occur beyond that identified in the OSA PEIR.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. There is no zoning for agricultural use on the project site. The zoning designation on the project site is Baker Ranch Planned Community with residential land uses. Under Williamson Act contracts, private landowners voluntarily restrict their land to agricultural land and compatible open-space uses; in return, their land is taxed based on actual use, rather than potential market value. There are no Williamson Act contracts in effect on the project site, as stated in the OSA PEIR. No impact would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. There is no zoning for forest land, timberland, or timberland production onsite. The zoning designation onsite is Baker Ranch Planned Community with residential land uses. Although this is a new

CEQA impact threshold not analyzed in the OSA PEIR, no impact would occur and no further analysis is necessary.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. This is a new CEQA impact threshold not analyzed in the OSA PEIR. Forest land is defined as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits" (California Public Resources Code Section 12220[g]). Timberland is defined as "land…which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees" (California Public Resources Code Section 4526).

None of the vegetation types identified on the project site in the OSA PEIR are native forest or woodland vegetation types. A tree assessment of the site was conducted by Dudek in March 2011 (Dudek 2011). Both native and non-native types of trees were identified. Vegetation types for which the dominant types of plants are non-native trees include Eucalyptus woodlands, orchards, and avocado groves. Vegetative types identified as native trees include the Coast live oak (Quercus agrifolia), Willow (Salix spp.), and California Sycamore (Platanus racemosa).

Findings of the assessment are summarized in Table 3.2-1.

Table 3.2-1
Tree Assessment Findings: Summary

Species: Common Name Scientific Name	***Quantity***	***Notes: Health/ Condition***	***Native Species?***	***Protected Species?***	***Live Trees to be Removed***
Coast live oak *Quercus agrifolia*	48	95.8 percent in good or fair condition	Yes	No, however, oak woodlands protected under California Public Resources Code Section 21083.4 in county jurisdictions.	47
Eucalyptus *Eucalyptus globulus* and *Eucalyptus camaldulensis*	1,202	Overall condition poor, including 324 dead trees. Due in part to lack of maintenance and extended drought.	No	Yes. Tree cutting permit required under City of Lake Forest Municipal Ordinance Chapter 6.20.	836
Willow *Salix spp.*	110	Most in good health	Yes	No	75
California Sycamore *Platanus racemosa*	5	Not provided	Yes	No	0
Avocado *Persea americana*	Not provided	dead and declining	No	No	Not provided

Source: Dudek 2011

The site contains an abandoned avocado orchard with an unspecified number of dead and declining avocado trees. Avocado (Persea Americana) is a non-native species. The site also formerly contained an unidentified number of orange trees. The eucalyptus trees are non-native and were formerly used as windrows. The tree assessment notes that most of the eucalyptus trees are in poor condition, due in part to lack of maintenance. Thus, the eucalyptus trees are not managed as agricultural windrows. Most of the trees onsite are eucalyptus and avocado trees that are in poor condition (some are dead), are not being maintained, and are not managed for any of the forest resources listed above. Most of these trees are proposed to be removed as part of the project.

As shown in Table 3.2-1, 163 native trees where identified onsite (oak, willow, and sycamore), however, they do not constitute 10 percent cover of the 387-acre site, and therefore, not considered forest land. The project site does not appear capable of supporting a 10 percent cover of native trees in natural conditions, considering the lack of native forest or woodland vegetation types identified onsite, and the poor condition of the eucalyptus and avocado trees due to the lack of maintenance. The project would involve removal of most of the coast live oak and willow trees. The five sycamore trees onsite are outside of the proposed development area and would not be impacted by the project.

Willow trees are a non-protected species and the coast live oak is only protected under county jurisdictions (per Public Resources Code 21083.4). However, the tree assessment recommends, and the Area Plan includes, measures consistent with state-level guidelines detailed in Public Resources Code Section 21083.4 for the replacement of these trees at a 2:1 ratio. The measures include the monitoring and maintenance, as well as necessary replacement of, newly planted trees for a period of seven years to ensure tree establishment. The proposed replanting consists of 115 new coast live oak trees of varying sizes and locations to replicate the size diversity present natural oak woodlands. The quantity of 115 trees represents an intentional overplanting to accommodate for a percentage of trees that may not survive. The tree assessment also identifies nine (9) coast live oaks that are good candidates for relocation, which are being considered for incorporation into the Area Plan.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. An area of about 112 acres opposite Bake Parkway from the project site that is mapped as Unique Farmland and is used as a commercial nursery. There are office and industrial uses between the east site boundary and Bake Parkway; only about 170 feet of the east project site boundary is opposite Bake Parkway from the mapped farmland opposite the roadway. There is no other mapped important farmland offsite near the project site. Development of the proposed residential, commercial, and open space uses on the project site is not expected to result in conversion of mapped farmland to non-agricultural use, or in conversion of forest land to non-forest use. Impacts would be less than significant.

3.3 AIR QUALITY

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to air quality:

PPP AIR-1 (OSA PEIR MMRP Air Quality Standard Condition) Project level review to determine construction and operation emissions.

PPP AIR-2 OSA PEIR MMRP Air Quality Standard Condition) Compliance with Title 24, Part 6, California's Energy Efficiency Standards for Residential and Nonresidential Buildings.

Project Design Features

There are no Project Design Features (PDFs) relating to potential air quality impacts.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

No New Impact. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the Air Quality Management Plan (AQMP). It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals contained in the AQMP. There are two key indicators of consistency (SCAQMD 1993):

Indicator 1: Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.

Indicator 2: Whether the project would exceed the assumptions in the AQMP. The AQMP strategy is, in part, based on projections from local general plans.

A project is consistent with the regional AQMP if it does not create new violations of clean air standards, exacerbates any existing violations, or delays a timely attainment of such standards. The project-related emissions were shown to be less than the SCAQMD CEQA significance thresholds in the OSA PEIR. Because the emissions are less than the applicable thresholds, clean air standards would not be violated or substantially worsened and the project would be consistent under the first indicator.

The "timely attainment" test is typically evaluated in determining whether air pollution emissions associated with a proposed project have been adequately incorporated into the AQMP. The AQMP is based upon patterns of existing and future development which are used to calculate the regional distribution of air pollution emissions. These inputs into regional air pollution modeling are derived from SCAG's Regional Comprehensive Plan (RCP). At the time the City certified the OSA PEIR for the Opportunities Study Area project, it was determined that the OSA project was not evaluated in the RCP. However, the City also found that the OSA project would generate fewer emissions than the prior General Plan land use designations and zoning, which were accounted for in the RCP. Although the OSA project was not consistent with the AQMP, it was environmentally superior.

The Shea/Baker project was analyzed as Site 1 in the OSA PEIR. The OSA PEIR air quality impact analysis (January 2006) assumed 2,815 maximum dwelling units and 320,000 square feet of commercial on the Shea/Baker Ranch property. The proposed project includes a maximum of 2,379 units and 25,000 square feet of commercial uses. The proposed development plan would generate less air pollution than the project that has already been analyzed in the OSA PEIR. Therefore, the proposed project would not exceed the assumptions in the AQMP and would be consistent under the second indicator. Consequently, as the project would be consistent under both indicators, it would not subvert the timely attainment objective of the South Coast Air Basin AQMP and impacts are less than significant in this regard. Further, the proposed land uses

are consistent with the General Plan and zoning designations for the project site. Implementation of the project does not require amendments to the zoning designations for the project site from the City. The project is also consistent with the analysis in the OSA PEIR. Therefore, the proposed project reduces impacts compared to OSA PEIR Site 1 and results in fewer units than assumed in the buildout projections of the Lake Forest General Plan and the regional AQMP. This topic will not be analyzed further.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation, including the SCAQMD construction and operational emission thresholds (identified in Table 4-3 of the City of Lake Forest CEQA Significance Threshold Guide)?

New Potentially Significant Impact. Construction and operation related air quality impacts were discussed and determined to be significant and unavoidable in the OSA PEIR. However, the OSA PEIR did not model construction impacts for individual development projects. Operational impacts were modeled and the PEIR identified that operational phase emissions would exceed SCAQMD thresholds for CO, volatile organic compounds (VOC), PM_{10}, and NOx.

The air quality modeling at the time the OSA PEIR Air Quality study was prepared utilized the California Air Resources Board's (CARB) URBEMIS2002 model. CARB has since updated emission factors and released a new model CalEEMod. SCAQMD now requires comparison to daily emissions thresholds and new air pollutant models have been released to evaluate construction emissions and impacts from regional air pollutant emissions from construction-related activities must be evaluated. As prescribed by the OSA PEIR, and to determine if the project would have significant impacts not addressed in the OSA PEIR, or significant effects substantially more severe than shown, it is necessary to compare the proposed Shea/Baker Ranch project with the project described as OSA Site 1. Rather than using the obsolete air quality model URBEMIS2002, the most recent version of the CalEEMod model (Version 2011.1.1) will be used to calculate the construction and operational emissions for the OSA Site 1 and the Shea/Baker Ranch's currently proposed project. As a result, this topic will be further analyzed in the Draft Supplement EIR for the Shea/Baker Ranch project to assess the new information regarding air quality emissions that has been identified since certification of the OSA PEIR, and whether it identifies a new significant impact or results in increased severity of a previously identified impact.

The results of an Air Quality study will be provided in the Draft EIR for the Shea/Baker Ranch project. This EIR section will compare the Shea/Baker Ranch project to the OSA Site 1 project to determine if it generates any new significant impacts as compared to the OSA PEIR.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) where the incremental effect of the project emissions, considered together with past, present, and reasonably anticipated further project emissions, increase the level of any criteria pollutant above the existing ambient level?

New Potentially Significant Impact. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The SCAQMD has recently designated the South Coast Air Basin as nonattainment for NO_2 (entire basin) and lead (Los Angeles County only) under the California adopted ambient air quality standards (AAQS) and attainment/maintenance for PM_{10} under the national AAQS. The construction plans include the grading and onsite transport of approximately 2,000,000 cubic yards (cy) of soil over a 3-month period. Daily regional construction emissions from clearing, grading and construction activities (fugitive dust and construction exhaust, including diesel) could exceed the daily thresholds. A number of individual projects in the area may

be under construction simultaneously with the proposed project. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction may result in substantial short-term increases in air pollutants. As a result, this topic will be further analyzed in the Draft Supplement EIR for the Shea/Baker Ranch project to assess the new information regarding air quality emissions that has been identified since certification of the OSA PEIR, and whether it identifies a new significant impact or results in increased severity of a previously identified impact.

d) Expose sensitive receptors to substantial pollutant concentrations based on SCAQMD local impact methodologies, including but not limited to Local Significance Thresholds and thresholds for PM2.5??

New Potentially Significant Impact. Since completion of the Air Quality analysis for the OSA PEIR, SCAQMD has also adopted localized significance thresholds for onsite emissions associated with construction activities. The SCAQMD developed localized significance thresholds (LSTs) for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site (offsite mobile-source emissions are not included the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS. LSTs are based on the ambient concentrations of that pollutant within the project area and the distance to the nearest sensitive receptor. The proposed project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevated pollutant concentration levels. Vehicular trips associated with the proposed project would likely contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality impacts would occur when emissions from vehicular traffic increase in local areas as a result of the proposed project. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. As a result, an assessment of project-related impacts on localized ambient air quality will be included and analyzed as a part of the Draft EIR to determine if it generates any new significant impacts as compared to the OSA PEIR.

e) Create objectionable odors affecting a substantial number of people?

No New Impact. The OSA PEIR determined that impacts associated with construction-generated odors and operation-generated odors would not affect a substantial number of people were considered less than significant. The PEIR reasoned that construction activities occurring on Sites 1 through 7 would generate airborne odors associated with the operation of construction vehicles (i.e., diesel exhaust) and the application of architectural coatings. These odors would occur during daytime hours only and would be isolated to the immediate vicinity of the construction sites. The PEIR further reasoned that standard construction requirements would be imposed on the developers/applicants associated with these construction projects that would address odors from construction activities. As such the OSA PEIR concluded that impacts associated with construction-generated odors would not affect a substantial number of people were considered less than significant. As with Site 1of the OSA PEIR, during construction activities for the proposed project, construction equipment exhaust, application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary, intermittent in nature, and would not constitute a public nuisance. No other sources of objectionable odors have been identified for the proposed project, and no mitigation measures are required. There are no new construction related odor impacts compared to the OSA PEIR.

The OSA PEIR found that new commercial uses could include restaurants, potential operational airborne odors could result from cooking activities. These odors would be similar to existing housing and food services uses throughout the City and would be confined to the immediate vicinity of the new buildings. Restaurants are also typically required to have ventilation systems that avoid substantial adverse odor

impacts. The other potential source of odors would be new trash receptacles associated with restaurants. These receptacles would be stored in areas and in containers as required by existing City and Health Department regulations, and be emptied on a regular basis, before potentially substantial odors have a chance to develop. As such, the OSA PEIR determined that odors from commercial uses would not affect a substantial number of people.

The proposed uses residential and commercial uses are similar to those anticipated by the OSA PEIR and are not anticipated to emit any objectionable odors. Chapter 6.14 of the Lake Forest Municipal Code does not specifically define nuisance odors, but Section 6.14.002(X) does incorporate any other condition declared by any State, County or City Statute, code or regulation to be a public nuisance. SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." Therefore, new significant objectionable odors posing a health risk to potential onsite and existing offsite uses are subject to existing regulations and would not occur as a result of the proposed project. There are no new odor impacts compared to the OSA PEIR. This topic will not be analyzed further.

3.4 BIOLOGICAL RESOURCES

Information in this section is based in part on the following technical reports:

- Draft Environmental Impact Report, No. 585, Alton Parkway Extension Project, County of Orange, 2006.
- Addendum 1 to the Draft Environmental Impact Report, No. 585, Alton Parkway Extension Project. County of Orange, March 2009.
- Addendum 2 to the Draft Environmental Impact Report, No. 585, Alton Parkway Extension Project, County of Orange, July 2009.
- Opportunities Study Area (OSA) Program Environmental Impact Report (PEIR), City of Lake Forest, 2008.
- Alton Parkway Extension Biological Technical Report, BonTerra, 2004.
- Least Bell's vireo focused surveys, BonTerra, 2008.

Information in this section is also based on the following permit documents as follows:

- U.S. Army Corps of Engineers, Permit Number SPL-2002-00937. 16 pp. The Section 404 individual permit was signed by ACOE on August 13, 2010.
- U.S. Fish and Wildlife Service. 2010. Formal Section 7 consultation for the Alton Parkway Extension project and Baker Ranch Community Development project, Orange County, California. 76pp. WS-OR-10B0011-08F0868. Through this Section 7 consultation under the Endangered Species Act, the FWS provides an incidental Take Permit for Shea/Baker Ranch project impacts to the federally listed least Bell's vireo and coastal California gnatcatcher. July 6, 2010.

- California Department of Fish and Game. 2010. Draft Lake or Streambed Alteration Agreement Notification No. 1600-2008-0300-R5 Baker Ranch Planned Community Project. 33pp. Signed by CDFG August 16, 2010.

- California Department of Fish and Game. 2010. California Endangered Species Act Consistency Determination. No. 2080-2010-031-05. 6 pp. Signed on August 12, 2010.

- California Regional Water Quality Control Board. 2010. Clean Water Act Section 401 Water Quality Standards Certification for the Baker Ranch Planned Community, City of Lake Forest, Orange County. 10pp. This is RWQCB's 401 Certification for the Shea/Baker Ranch project. July 1, 2010

- Vandermost Consulting, Inc. 2010. Shea/Baker Ranch Tentative Tract 16466 Conceptual Habitat Management and Mitigation Plan. This report identifies the mitigation and monitoring requirements for the Shea/Baker Ranch project impacts to Corps, FWS, RWQCB, and CDFG resources. Dated September 2, 2010.

Copies of these studies are included in the Technical Appendices to this Initial Study (Appendix B1, B2, B3).

Existing Setting

The Shea/Baker Ranch project site is located within the City of Lake Forest in Orange County between Commercentre Drive, Towne Centre Drive, Borrego Canyon Wash, and Bake Parkway. The project site includes a portion of the Borrego Canyon Wash that is unimproved through the project area and is highly impacted in terms of by run-off from upstream development. This portion of the Wash is highly unstable and has experienced substantial erosion subsequent to the upstream development of Foothill Ranch. Between 1991 and 1998 various sections of the downstream portion experienced an almost 50 percent widening. An additional 50 percent widening occurred between 2002 and 2005. Borrego Canyon Wash erosion resulted in approximately 40 acre-feet of sedimentation between 2002 and 2005 alone. This portion consists of sandy soils with a combination of non-vegetated areas and areas containing native riparian habitat such as willow riparian and mulefat scrub. The wash lies within the San Diego Creek watershed (Santa Ana Regional Board) and serves as a wildlife movement corridor, flowing along the northwesterly boundary of the project site and ultimately discharging to San Diego Creek. The remainder of the site consists of an active nursery operation, recently abandoned avocado orchards, and disturbed land, in addition to native habitat.

As part of the Project, the segment of the Borrego Canyon Wash that extends the length of the property will be modified to repair erosion damage, to stabilize the channel, and to allow for revegetation of the Wash. The proposed improvements to the Borrego Canyon Wash were described and evaluated in the County of Orange Alton Parkway EIR (No. 585) which was certified in September 2007 (with subsequent addenda, Orange County 2006, 2009a, 2009b). Because the proposed improvements will require work within the Wash which has been designated as "waters of the U.S." and "waters of the State," and because of the Wash improvements being reviewed in conjunction with the Alton Parkway extension, permits and approvals from the U.S. Army Corps of Engineer, Regional Water Quality Control Board, U.S. Fish and Wildlife Service, and California Department of Fish and Game were obtained prior to the commencement of construction of Alton Parkway. These permits also cover impacts to other waters of the U.S. and State within the Shea/Baker Ranch property. The impacts to these aquatic and associated biological resources on the Shea/Baker Ranch property were analyzed in the OSA PEIR, and then at a project-level of detail in the County's Alton Parkway Extension EIR.

Proposed Improvements to Borrego Canyon Wash

The Borrego Canyon Wash originates in the foothills above the site and flows in a southwesterly direction until it discharges into the San Diego Creek. The portion of the Wash upstream from the project site is incised and consists of exposed bedrock. Improvements to this portion of the wash consist of onsite slope stabilization and installation of a low-flow inlet structure slightly north of the site's northern boundary in a portion of the Wash already improved and managed by the Orange County Flood Control District (OCFCD).

The portion of the Wash adjacent to the project site is an incised earthen channel with nearly vertical banks. In order to stabilize the banks of the Wash, a Bypass Channel will be constructed parallel to the existing wash alignment. The Bypass Channel is intended to control erosive flows that have historically caused the Wash to become unstable. The Bypass Channel will be designed as a reinforced concrete box (RCB) and will convey 100-year storm flows from upstream before it outlets back into the downstream reach of the Wash, south of the project site.

In order to construct the Bypass Channel, the existing Borrego Canyon Wash bottom and the existing bank would be removed, re-contoured, and replanted with riparian vegetation. The work is limited to a portion of the wash bottom and the slope of the Borrego Canyon Wash along and within the existing nursery operation. This slope presently consists predominantly of non-native ornamental vegetation. The Bypass Channel would connect to an existing County-owned drop structure upstream, approximately 300 feet north of the Shea/Baker Ranch property, and extend to the southern point where the Borrego Canyon Wash exits the Shea/Baker Ranch property, for a total of approximately 4,200 linear feet. Storm flows greater than approximately 200 cubic feet per second would be diverted into the Bypass Channel. Flows less than approximately 200 cubic feet per second (low flows) would continue to drain into and flow through the Borrego Canyon Wash to support and reestablish habitat. The improvements to the Borrego Wash were evaluated as part of the County of Orange Alton Parkway EIR. However, the timing of the construction of the Borrego improvements is tied to the construction phasing of the Shea/Baker Ranch project. Construction of the Borrego Canyon Wash improvements will occur during Phase 2 of grading, as described in Section 1.2.5, *Project Phasing*.

Waters and Wetlands

Regional Water Quality Control Board (RWQCB)

"Waters of the U.S." on the Shea/Baker Ranch site total 4.58 acres, of which approximately 3.99 acres occur within the Borrego Canyon Wash and approximately 0.59 acre consist of unnamed drainages. The project also includes a total of 0.27 acre of Borrego Canyon Wash offsite, totaling 4.85 acres of waters. All waters onsite are non-wetland. A Clean Water Act Section 401 Water Quality Standards Certification was issued for the Shea/Baker Ranch project in 2010. In addition, a Section 404 individual permit was signed by ACOE on August 13, 2010 (ACOE 2010).

California Department of Fish and Game (CDFG)

Jurisdictional streambed on the Shea/Baker Ranch site totals 11.18 acres, of which approximately 8.85 acres occur within Borrego Canyon Wash and approximately 1.98 acres consist of unnamed drainages. In addition, 0.35 acre of streambed impacts occur offsite within an improved flood control facility located in a portion of the Borrego Canyon Wash just upstream from Shea/Baker Ranch.

Onsite project impacts total 6.38 acres, of which approximately 0.89 acre is temporary and 5.49 acres are permanent. Temporary impacts occur on the wash bottom and banks of the Borrego Canyon Wash to construct the bypass alternative and stabilize the manufactured slopes. The slopes are currently dominated

by non-native vegetation and will be replaced with native vegetation. Of the 5.49 acres of permanent impacts, a total of 3.51 acres occur within the Borrego Canyon Wash and 1.98 acres in the unnamed drainages, including 1.08 acre for Alton Parkway construction and 0.90 acre for residential/commercial development. The permanent offsite impact of 0.23 acre is within the already improved upstream portion of Borrego Canyon Wash, and will result from construction of the inlet for the proposed Bypass Channel. Impacts to linear feet total approximately 9,000 feet. Preserved waters total 4.80 acres that occur within Borrego Canyon Wash onsite. As listed above, the CDFG issued a Streambed Alteration Agreement and California Endangered Species Act Consistency Determination on August 16, 2010 (CDFG 2010a).

Threatened and Endangered Species

BonTerra Consulting prepared a Biological Technical Report for the Alton Parkway Extension EIR in 2004 (BonTerra 2004). This report also analyzed impacts resulting from improvements between Commercentre Drive to Towne Centre Drive. Glenn Lukos Associates (GLA) also prepared various survey reports. All these biological reports are included as appendices to the Alton Parkway Extension EIR. BonTerra Consulting conducted focused surveys for the least Bell's vireo (*Vireo bellii pusillus)* in 2008 on both the Shea/Baker Ranch site and the off-site adjacent County of Orange portion of the Alton Parkway right of way. In addition, vegetation mapping for the Shea/Baker Ranch portion was updated by PCR in 2009 (PCR 2009). Vegetation in the study area was classified using the Orange County Habitat Classification System (OCHCS). Two listed species were identified as present on the project site, including the coastal California gnatcatcher (*Polioptila californica californica*) [federally threatened; California Species of Special Concern] and the least Bell's vireo (*Vireo belliipusillus*) [state and federally endangered], as discussed below.

Coastal California Gnatcatcher

Three protocol surveys were conducted in 2005 by GLA. One coastal California gnatcatcher pair and one single bird were observed on the project site. These surveys were not repeated because all coastal sage scrub suitable for gnatcatcher on the Shea/Baker Ranch site is assumed occupied. The U.S. Fish and Wildlife Service (USFWS) concurred with this approach (BonTerra 2008).

The California gnatcatchers on the Shea/Baker Ranch site are covered under the County of Orange Coastal-Natural Coastal Communities Conservation Plan (NCCP). The County of Orange is a Participating Landowner of the NCCP and has been issued a 10(a) permit as part of the approval of the NCCP/Habitat Conservation Plan (HCP), which authorizes incidental take of coastal California gnatcatchers and coastal sage scrub designated critical habitat, and provides regulatory coverage for a number of "Identified Species". Potential direct and indirect impacts are fully mitigated for Participating Landowners of the NCCP/HCP with no additional mitigation required assuming no incidental take of gnatcatcher beyond that anticipated in the biological opinion (BO) for the NCCP/HCP. The BO for the overall Alton Parkway extension and the Shea/Baker Ranch portion of the project (i.e., development of the planned community and Alton Parkway extension from Commercentre Drive to Towne Center Drive) dated July 6, 2010 determined that the County's segment of the proposed Alton Parkway extension is consistent with the NCCP/HCP. Shea/Baker Ranch is a “Non-Participating Landowner” to the NCCP/HCP and did not receive an incidental take permit for the effect of its development on the gnatcatcher. However, within specific areas, incidental take granted to Participating Jurisdictions can be extended to a Non- Participating Landowner through payment of an in-lieu mitigation fee to the Nature Reserve of Orange County (NCCP/HCP, Section 6.2.2). The Shea/Baker Ranch property falls within the City of Lake Forest, a Participating Jurisdiction, and the proposed project, including the Shea/Baker Ranch segment of the Alton Parkway extension, will be constructed in an area that was anticipated for development under the NCCP/HCP. The City of Lake Forest is responsible for issuing the grading permits necessary for the proposed project and therefore, will verify the payment of the in lieu fees.

A total of 10.2 acres of suitable gnatcatcher habitat on the Shea/Baker Ranch portion is assumed occupied, including Sagebrush-Buckwheat Scrub (0.5 acre), Sagebrush Scrub (3.9 acres), Sagebrush Scrub/Ruderal (1.5 acres), Sagebrush Scrub/Disturbed (0.4 acre) and Mixed Scrub (3.9 acres).

A formal Section 7 consultation was issued by USFWS in 2010. The FWS provides take authorization for the Shea/Baker Ranch project's impacts to the federally listed least Bell's vireo as required by the County's NCCP/HCP (USFWS 2010).

Least Bell's Vireo (Vireo)

Focused surveys were conducted in 2005 by GLA biologists. Focused surveys were also conducted in spring/summer 2002. No least Bell's vireos were observed during the protocol surveys in 2002 or 2005. BonTerra Consulting subsequently conducted focused surveys on 14 separate days between April 14, 2008 and July 15, 2008. The survey results were documented in a letter report dated August 13, 2008 and submitted to USFWS. BonTerra Consulting conducted focused surveys for the least Bell's vireo in 2008 on both the Shea/Baker Ranch site and the off-site adjacent County of Orange site. The least Bell's vireo was observed on both the Shea/Baker Ranch site and the County site, however because surveys were not initiated concurrently for each portion of the survey area, it is somewhat difficult to make conclusive findings on the total number of least Bell's vireo present during the surveys. Vireos were observed along Borrego Canyon Wash only for the Shea/Baker Ranch project in three separate locations. Habitat at these locations include a mix of willows, western sycamore (*Platanus racemosa*) and coast live oak (*Quercus agrifolia*) and black willow with arroyo willow, narrow-leaved willow and mulefat in addition to tamarisk (*Tamarix sp*.) and pampas grass (*Cortaderua selloana*) with blue gum and tree tobacco on adjacent slopes.

Other Species

Sensitive plant and animal species were also observed on the project site during focused surveys including two species in the proposed jurisdictional mitigation area within Borrego Canyon Wash: paniculate tarplant [California Native Plant Society, CNPS] and yellow warbler (*Dendroica petechia*) [California Species of Special Concern]. The paniculate tarplant was observed on the northwestern banks of Borrego Canyon Wash that are not proposed for impacts. There is suitable habitat for yellow warbler on the project site, but it is unknown if the species breed onsite. Some of the individuals observed are expected to have been migrants moving through the survey area on their way to their breeding grounds. However, observations occurred during a survey on June 20, 2008 that is generally later than migrants, so it is possible the bird species nest on the project site.

Migrant willow flycatchers (Empidonax traillil) were identified in riparian adjacent to the project site in 2002 and 2008 (Vandermost 2010; BonTerra 2008) . The BO determined that the project site is unoccupied by southwestern willow flycatchers (E.t. extimus).

Recreational /Use Public Access

The current recreational and public use of the area of impact to "Waters of the U.S." and jurisdiction streambed is non-consumptive; there is no fishing, hunting, or taking of natural resources.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to biological resources:

PPP BIO-1 (*OSA PEIR MMRP Biological Resources Standard Condition*) Compliance with HCP/NCCP including construction minimization measures listed on page 3.4-34 of the Draft OSA PEIR.

PPP BIO-2 (*OSA PEIR MMRP Biological Resources Standard Condition*) Compliance with applicable resource agency permitting requirements, including but not limited to: California Department of Fish and Game, U.S. Fish and Wildlife Service, Army Corps of Engineers.

PPP BIO-3 (*OSA PEIR MMRP Biological Resources Standard Condition BR1*) The applicant shall comply with the requirements of state and federal agencies with regards to construction within jurisdictional areas. This includes the applicant obtaining a Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game. A mitigation program will be subject to the review and approval of CDFG during the process to obtain a Section 1602 Streambed Alteration Agreement. Prior to the issuance of a grading permit, the applicant shall comply with the requirements of state and federal agencies with regards to construction within the jurisdictional area(s).

PPP BIO-4 (*OSA PEIR MMRP Biological Resources Standard Condition BR2*) The applicant shall comply with the requirements of state and federal agencies with regards to construction within the jurisdictional areas. This includes the applicant obtaining a Section 401 Water Quality Certification and a Section 404 (Clean Water Act) permit from the Regional Water Quality Control Board (RWQCB) and the U.S. Army Corps of Engineers respectively. A mitigation program will be subject to the review and approval of the Corps and the RWQCB during the processes to obtain a Section 404 permit and 401 Water Quality Certification.

PPP BIO-5 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) PDF 2-1b A By-Pass Channel would be constructed within and parallel to Borrego Canyon Wash to accept storm flow runoff in excess of approximately 50 cubic feet per second. The precise level of diversion shall be determined during project design and in coordination with regulatory permitting.

PPP BIO-6 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) SC 2-1b Prior to the issuance of a grading permit, the Project Applicant shall submit a Geotechnical Report to the City of Lake Forest Building Official for approval. The report shall include the information and be in the form as required by the County of Orange Grading Manual and shall be approved by the Public Works Director.

PPP BIO-7 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) SC 2-2b Project compliance with City of Lake Forest design requirements shall be verified by the City of Lake Forest Building Official. The City of Lake forest utilizes the California Building Code which contains provisions which regulate the design and construction of excavations, retaining walls, and other elements to control the effects of seismic ground shaking and adverse soils conditions.

PPP BIO-8 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) MM 2-1b During construction, the Project Engineer shall ensure that the Oso sand encountered during grading shall not be used as aggregate in structural concrete. If it is used in non-structural concrete, then the Project Engineer shall ensure that the concrete mix design shall include a 20 percent substitution of fly ash for cement. If the Oso sand is used for fill slopes, then the Project Engineer shall ensure that it is mixed with a non-expansive fine-to-granular soil to reduce potential surface instability.

PPP BIO-9 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) MM 2-2b Corrective grading shall remove unstable and/or liquefaction-

prone soils to be replaced with engineered fill. Inclusion of this requirement in the grading plans shall be confirmed by the Public Works Director prior to the issuance of a grading permit.

PPP BIO-10 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) SC 3-3b Prior to approval of the Project plans and specifications, the City of Lake Forest Director of Public Works, or designee, shall confirm that the plans and specifications stipulate that the Project site will be adequately protected from the 100-year storm, will not adversely impact downstream properties, and is designed in conformance with applicable City and OCFCD requirements.

PPP BIO-11 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) SC 3-4b Prior to the final map approval on areas involving Borrego Canyon Wash, the City of Lake Forest shall confirm that Shea-Baker Ranch Associates has entered into an agreement with OCFCD that specifies the terms under which the landowner will design, construct and dedicate flood control improvements to OCFCD and the terms under which OCFCD will review, approve, inspect and accept right-of-way and facilities. Once ownership transfer is complete per the agreement, the OCFCD will be responsible for inspection, maintenance and oversight of the facilities.

PPP BIO-12 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) SC 3-5b Prior to the initiation of construction activities associated with installation of the By-Pass Channel along the Shea Baker Ranch Associates portion of the Borrego Canyon Wash, a Section 1602 Streambed Alteration Agreement shall be obtained from the California Department of Fish and Game if one is determined to be required, and mitigation for impacts to jurisdictional habitat shall be provided at a minimum of 1:1 ratio.

PPP BIO-13 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) SC 3-6b Within one year of the completion of Project construction, a LOMR shall be prepared and processed with the FEMA for proposed construction within the 100-year flood plain limits.

PPP BIO-14 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) SC 3-7b Any flood-control improvements along Borrego Canyon Wash will be submitted to the OCFCD for review, approval, and/or ownership determination. If it is determined that OCFCD will own and maintain such improvements along Borrego Canyon Wash, then prior to the approval of plans for such improvements, the Chief Engineer of RDMD, or designee, in consultation with the Manager, RDMD/Public Works/Flood Control Division, shall confirm that the plans and improvements are compatible with OCFCD criteria, including but not limited to ROW improvements and access.

PPP BIO-15 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) SC 3-8b The General Requirements identified in the New Development Section of the Santa Ana Regional Municipal NPDES Permit shall be considered, and where applicable, will be incorporated into the WQMP.

PPP BIO-16 (*Alton Parkway Extension EIR No. 583, MMRP Project Design Features, Standard Conditions and Mitigation Measures*) SC 3-9b Although water quality monitoring data has not identified the existence of selenium in Borrego Canyon Wash adjacent to the project area, in the event that groundwater dewatering is necessary, the City of Lake Forest Director of Public Works and

Building Official, or designee, will be contacted prior to initiation of dewatering activities, and the dewatering will comply with the requirements of Order R8-2004-0021.

Project Design Features

The following Project Design Features (PDFs) relate to potential biological resources impacts:

PDF BIO-1 (*OSA PEIR MMRP Biological Resources Project Design Feature*) Preservation of habitat areas on Site.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

No New Impact.

Coastal California Gnatcatcher

A total of 10.2 acres of suitable gnatcatcher habitat on the Shea/Baker Ranch portion is assumed occupied, including Sagebrush-Buckwheat Scrub (0.5 acre), Sagebrush Scrub (3.9 acres), Sagebrush Scrub/Ruderal (1.5 acres), Sagebrush Scrub/Disturbed (0.4 acre) and Mixed Scrub (3.9 acres). Shea/Baker Ranch will pay the in-lieu mitigation fee of $663,000 ($65,000 per acre) for the loss of 10.2 acres of gnatcatcher-occupied coastal sage scrub that will be removed in association with its development (Vandermost 2010). The mitigation fee will be paid prior to initiating project activities on their property that have potential to impact the gnatcatcher. SBRA will also implement avoidance and minimization measures for gnatcatcher as described in the NCCP/HCP.

The BO for the NCCP/HCP concluded that the level of take anticipated in the plan area is not likely to result in jeopardy to the gnatcatcher. Given that the proposed project is consistent with the NCCP/HCP, the BO did not anticipate any adverse effects to the gnatcatcher that were not previously evaluated in the biological opinion for the NCCP/HCP, and concluded that implementation of the proposed project will not result in jeopardy to the gnatcatcher. The USFWS extended take coverage for gnatcatcher already provided to the County and City of Lake Forest under existing incidental take permits for the NCCP/HCP. No further consultation on the gnatcatcher is required for this project.

Least Bell's Vireo (Vireo)

The vireo is "conditionally covered" by the NCCP/HCP for Participating Landowners, subject to conditions specifying that impacts to major occurrences outside the reserve must not have significant long-term conservation value, and that provision is made for any other appropriate mitigation. The occupied habitat along Borrego Wash is considered limited in extent due to its natural hydrology and erosive flows, and was only recently occupied by vireo in 2008 following the fires in 2007 that destroyed high quality habitat in the surrounding area. The southern willow scrub and mule fat scrub in Borrego Wash continue to support a few breeding pairs of least Bell's vireo, however its potential to contribute to the long-term conservation value within the Central-Coastal NCCP subregion is limited by the extent of habitat available and the natural effect of major storm events periodically washing out habitat as it develops. The long-term conservation value of the Borrego Wash has the potential to increase with the proposed improvements, through construction of the by-pass channel that will reduce the erosive flows and allow a stable riparian habitat to be established.

According to USFWS, no incidental take was authorized for vireo in Borrego Canyon Wash since it is considered to have long-term conservation value based on the extent of riparian vegetation and the number

of vireos it supports. Therefore an incidental take permit for vireo is required for the Baker Ranch Community Development Project. BonTerra Consulting prepared a Biological Assessment (BA) for impacts to vireos on the project site dated March 17, 2009 (Vandermost 2010). Pursuant to the NCCP/HCP conditions, the BA assesses least Bell's vireo habitat and presence, and also sets forth the feasible conservation, mitigation, and management activities that will compensate for the effects of the proposed project. This document was submitted to the Corps and USFWS for formal consultation under Section 7 of the Federal ESA and issuance of a BO and Incidental Take Statement letter from USFWS. CDFG was also involved in this process to ensure the BO complies with CDFG requirements for issuing a Consistency Determination pursuant to Fish and Game Code Section 2080.1. USFWS issued their final Section 7 consultation letter, including the BO and Incidental Take Statement, dated July 6, 2010.

As outlined in the BO, development of the Shea/Baker Ranch project will impact 2.58 acres of occupied vireo habitat within Borrego Wash, including 0.61 acre of Southern Willow Scrub, 0.62 acre of Mulefat Scrub, and 1.35 acres of ephemeral wash. Shea/Baker Ranch will offset impacts in Borrego Wash through: 1) avoidance of 1.62 acres of vireo habitat, including 1.37 acres of willow riparian and 0.25 acre of mulefat scrub; 2) revegetation of 3.10 acres of riparian vegetation on the graded wash bottom and slope areas; 3) and enhancement of 3.13 acres of degraded riparian vegetation through removal of non-native plants. A 13.27 acre “Post Project Preservation Area” will be preserved and managed in perpetuity, including 7.85 acres of vireo habitat and 4.83 acres of gnatcatcher habitat. The adoption of conservation measures outlined in the BO will limit project impacts to vireo to indirect, temporary habitat loss within jurisdictional waters.

The incidental take authorization allows the Shea/Baker Ranch project for impacts to 2.58 acres of vireo habitat and abandonment of up to three vireo nests. The USFWS determined that this level of anticipated take is not likely to result in jeopardy to the vireo. No direct take of individual birds is anticipated since riparian habitat will be removed outside of the nesting season under the direction of a qualified biologist. In addition, no indirect impacts from adjacent construction will occur since a qualified biological monitor will be present during the vireo breeding season if work occurs within 500 feet of occupied habitat.

Conceptual Habitat Mitigation and Monitoring Plan

SBRA has submitted a Conceptual Habitat Mitigation and Monitoring Plan (HMMP) (Vandermost 2010) addressing a minimum of 3.10 acres of riparian re-vegetation and 3.13 acres of riparian vegetation enhancement. The Shea/Baker Ranch HMMP must be approved by CFWO and CDFG prior to impacting vireo habitat on the project site. Re-vegetation and enhancement called for in this plan will be initiated immediately following completion of grading and construction of the bypass channel in the Borrego Wash. The plan includes a 5- year monitoring and maintenance plan with specific quantitative performance criteria for evaluating the progress of the re-vegetation/enhancement efforts.

Shea/Baker Ranch or its successors will be responsible for implementing the onsite mitigation pursuant to permits from the Agencies (Corps, CDFG, RWQCB and USFWS) and the HMMP. The goal of the mitigation plan is to compensate for impacts to Corps/RWQCB jurisdictional waters, CDFG jurisdictional streambed, and vireo habitat pursuant to the USFWS BO within Borrego Canyon and the unnamed drainages as follows:

Borrego Canyon Wash

- Avoid 4.80 acres of CDFG jurisdictional streambed, incorporating 1.62 acres of vireo habitat (1.37 acres of willow riparian and 0.25 acre of mulefat scrub) and 2.39 acres of jurisdictional "waters of the U.S.";

- Avoid 4.83 acres of gnatcatcher habitat adjacent to the Wash;

- Revegetate 3.10 acres of riparian vegetation on the graded wash bottom and slope areas. Vireo habitat will be created by planting the mitigation with native riparian plant species that currently occur in the area;

- Enhance 3.13 acres of degraded riparian vegetation through removal of nonnative plants (of which 2.59 acres is currently within CDFG jurisdiction and an additional 0.1 acre will be within CDFG jurisdiction following reconstruction of the Borrego Wash slopes);

- Establish the revegetation and enhancement areas ("mitigation areas") as selfsustaining habitat, which would require no human support once native vegetation has been established, pursuant to the performance goals outlined;

- Restore temporary impacts totaling 0.89 acre of CDFG jurisdictional streambed and 0.87 acre of jurisdictional "waters of the U.S." at a 1:1 ratio, including replanting bare or exposed areas with native container plants or seeds of species local to Orange County.

The total 13.27 acres of avoidance, revegetation and enhancement will be preserved in perpetuity through a conservation easement and managed pursuant to a Perpetual Management Plan that will be prepared, as outlined in conservation measures 14 and 15 of the USFWS BO.

Unnamed Drainages

- Create approximately 2.00 acres of riparian habitat in the proposed water detention basin on the Shea/Baker Ranch site;

- Payment of an in-lieu fee for the eradication of 0.59 acre of invasive woody plant species within and adjacent to waters of the State, as required by the RWQCB 401 certification issued for the project dated July 1, 2010. The fee payment must include funding for a minimum of 10-years of follow-up maintenance.

Other Species

The paniculate tarplant was observed on the northwestern banks of Borrego Canyon Wash that are not proposed for impacts. There is suitable habitat for yellow warbler on the project site, but it is unknown if the species breed onsite. Some of the individuals observed are expected to have been migrants moving through the survey area on their way to their breeding grounds. However, observations occurred during a survey on June 20, 2008 that is generally later than migrants, so it is possible the bird species nest on the project site. The measures proposed for vireo as described above will also benefit the yellow warbler, and will limit impacts to temporary loss of habitat with no direct take of birds or indirect impacts from construction activities.

Migrant willow flycatchers (*Empidonax traillil*) were identified in riparian adjacent to the project site in 2002 and 2008. The BO determined that the project site is unoccupied by southwestern willow flycatchers (*E.t. extimus)* and therefore the proposed project is not likely to adversely affect the species.

Conclusion

Impacts to sensitive species from development of Site 1 were identified as less than significant in the OSA PEIR after implementation of mitigation measures 3.4-1 through 3.4-3, which are incorporated into the proposed Shea/Baker Ranch project (COLF 2008).

The proposed project would impact the federally endangered least Bell's vireo, and mitigate this impact to a less than significant level through a number of habitat restoration and protection measures. The FWS Section 7 consultation provides an Incidental Take Permit for this impact, with conditions. The CDFG prepared an Endangered Species Act Consistency Determination that concludes that the project's mitigation measures would reduce the impacts to state-listed species to a less than significant level. The development footprint of the proposed project is the same as that of Site 1 in the OSA PEIR. Therefore, the proposed project would not cause any additional impacts to biological resources compared to impacts identified in the OSA PEIR.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR with no changes made. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed Shea/Baker Ranch project. In cases where these OSA mitigation measures have been satisfied by studies prepared for this Initial Study it is so noted in *italics*.

It should be noted that the Shea/Baker Ranch project has satisfied mitigation measures BR MM-1 to BR MM-3 listed below.

BIO MM-1 (OSA PEIR Mitigation Measure 3.4-1). Sensitive Species Surveys. Where future development projects have the potential to reduce or eliminate habitat for native plant and wildlife species or sensitive habitats, including but not limited to those listed in OSA PEIR Appendix E (Sensitive Species Potentially Occurring within the Project Area), the project applicant shall conduct biological field surveys of the Project Area to characterize the extent and quality of habitat that would be impacted by project development. Surveys shall be conducted in accordance with current CDFG or USFWS survey protocols for the target species by qualified biologists or botanists. If no sensitive species are observed and the regulatory agencies agree with those findings then no further mitigation will be required for the species. Similarly, if no sensitive habitats are observed and the regulatory agencies agree with those findings then no further mitigation will be required. If sensitive species or habitats are documented on a specific site, and the species or habitat is covered by the NCCP/HCP the applicant shall conform and comply with the applicable requirements of the NCCP/HCP and proceed with MM 3.4-2. If the species or habitat is not covered in the NCCP/HCP, then refer to MM 3.4-3. For impacts to wetlands and other aquatic habitats, refer to MM 3.4-4.

BIO MM-2 (OSA Program EIR Mitigation Measure 3.4-2). Loss of Coastal Sage Scrub Habitat and Plant and Animal Species Protected by the NCCP/HCP. Prior to recordation of a subdivision map or issuance of a grading permit, whichever comes first, the Applicant shall retain a qualified, permitted biologist to confirm the presence and quantity of coastal sage scrub habitat located on the project site. If coastal sage scrub habitat is found to be located on the project site, the Applicant shall submit proof to the Director of Development Services that in-lieu fees have been paid to the County of Orange Central/Coastal Natural Communities Conservation Plan (NCCP) Reserve.

The Applicant shall also demonstrate to the satisfaction of the Director of Development Service compliance with the following NCCP construction impact avoidance measures or such measure in effect at the time of construction:

1. To the maximum extent practicable, no grading of CSS habitat that is occupied by nesting gnatcatchers will occur during the breeding season (February 15 through July 15). It is expressly understood that this provision and the remaining provisions of these "construction-related

minimization measures," are subject to public health and safety considerations. These considerations include unexpected slope stabilization, erosion control measures and emergency facility repairs. In the event of such public health and safety circumstances, landowners or public agencies/utilities will provide USFWS/CDFG with the maximum practicable notice (or such notice as is specified in the NCCP/HCP) to allow for capture of gnatcatchers, cactus wrens and any other CSS Identified Species that are not otherwise flushed and will carry out the following measures only to the extent as practicable in the context of the public health and safety considerations.

2. Prior to the commencement of grading operations or other activities involving significant soil disturbance, all areas of CSS habitat to be avoided under the provisions of the NCCP/HCP, shall be identified with temporary fencing or other markers clearly visible to construction personnel. Additionally, prior to the commencement of grading operations or other activities involving disturbance of CSS, a survey will be conducted to locate gnatcatchers and cactus wrens within 100 feet of the outer extent of projected soil disturbance activities and the locations of any such species shall be clearly marked and identified on the construction/grading plans.

3. A monitoring biologist, acceptable to USFWS/CDFG will be on site during any clearing of CSS. The landowner or relevant public agency/utility will advise USFWS/CDFG at least seven (7) calendar days (and preferably fourteen (14) calendar days) prior to the clearing of any habitat occupied by Identified Species to allow USFWS/CDFG to work with the monitoring biologist in connection with bird flushing/capture activities. The monitoring biologist will flush identified Species (avian or other mobile Identified Species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities. If birds cannot be flushed, they will be captured in mist nets, if feasible, and relocated to areas of the site to be protected or to the NCCP/HCP Reserve System. It will be the responsibility of the monitoring biologist to assure that Identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities on a timely basis.

4. Following the completion of initial grading/earth movement activities, all areas of CSS habitat to be avoided by construction equipment and personnel will be marked with temporary fencing or other appropriate markers clearly visible to construction personnel. No construction access, parking or storage of equipment or materials will be permitted within such marked areas.

5. In areas bordering the NCCP reserve system or Special Linkage/Special Management areas containing significant CSS identified in the NCCP/HCP for protection, vehicle transportation routes between cut-and-fill locations will be restricted to a minimum number during construction consistent with project construction requirements. Waste dirt or rubble will not be deposited on adjacent CSS identified in the NCCP/HCP for protection. Preconstruction meetings involving the monitoring biologist, construction supervisors and equipment operators will be conducted and documented to ensure maximum practicable adherence to these measures.

6. CSS identified in the NCCP/HCP for protection and located within the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves as recommended by the monitoring biologist.

BIO MM-3 (OSA Program EIR Mitigation Measure 3.4-3).Loss of Species or Habitats Not Covered by the NCCP/HCP. To mitigate for potential impacts to species or habitats not covered by the NCCP/HCP the following process shall be followed. The applicant has two options: (1) the applicant can obtain suitable replacement habitat and dedicate that property to the conservation

and protection of sensitive species in perpetuity, or (2) the applicant can satisfy the requirements of the FESA and CESA under the consultation and permitting provisions of these regulations. In both of these options, the applicant shall first consult with the appropriate resource agency (CDFG and/or USFWS) and establish a mitigation plan for the specific species or habitat. Appropriate mitigation shall be identified in a mitigation plan prepared by the applicant. In this mitigation plan the applicant shall demonstrate capacity for funding appropriate mitigation and the mitigation must be legally assured. Habitat acquisition and set asides shall occur in areas with long-term conservation potential. Any mitigation proposed shall be approved by the City and appropriate resource agency prior to implementation.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

No New Impact.

Sensitive natural communities are natural communities that are considered rare in the region by the US Fish and Wildlife Service (USFWS), CDFG, or local regulatory agencies; that are known to provide habitat for sensitive animal or plant species; or are known to be important wildlife corridors. Riparian habitats are those along banks of rivers or streams. According to the OSA PEIR, the project site contains five drainage courses. Four riparian vegetation types were identified onsite: willow riparian scrub, mulefat scrub, coast live oak woodland, and ephemeral drainage/wash (BonTerra 2008). Four additional natural communities were identified onsite that are considered to be sensitive by the USFWS and CDFG: coastal sage scrub, chaparral, needlegrass grassland, and southern willow riparian scrub. Impacts to sensitive natural communities and riparian habitats from development of OSA Site 1 were identified as less than significant in the OSA PEIR after implementation of mitigation measures 3.4-2 through 3.4-4, which are incorporated into the proposed project.

Grading work on the project site will fill various tributaries to the Wash and construction of the flood control facility will result in discharges of fill to Borrego Canyon Wash. Jurisdictional streambed on the Shea/Baker Ranch site totals 11.18 acres, of which approximately 8.85 acres occur within Borrego Canyon Wash and approximately 1.98 acres consist of unnamed drainages. In addition, 0.35 acre of streambed impacts occur offsite within an improved flood control facility located in a portion of the Borrego Canyon Wash just upstream from Shea/Baker Ranch.

Onsite project impacts total 6.38 acres, of which approximately 0.89 acre is temporary and 5.49 acres are permanent. Temporary impacts occur on the wash bottom and banks of the Borrego Canyon Wash to construct the bypass alternative and stabilize the manufactured slopes. The slopes are currently dominated by non-native vegetation and will be replaced with native vegetation. Of the 5.49 acres of permanent impacts, a total of 3.51 acres occur within the Borrego Canyon Wash and 1.98 acres in the unnamed drainages, including 1.08 acre for Alton Parkway construction and 0.90 acre for residential/commercial development. The permanent offsite impact of 0.23 acre is within the already improved upstream portion of Borrego Canyon Wash, and will result from construction of the inlet for the proposed Bypass Channel. Impacts to linear feet total approximately 9,000 feet. Preserved waters total 4.80 acres that occur within Borrego Canyon Wash onsite.

The proposed project would impact riparian habitats occupied by least Bell's vireo. These impacts will be mitigated to a less than significant level through habitat restoration and protection measures.

The channel currently consists of patchy native vegetation with sparsely vegetated, predominately non-native slopes. In addition, the vegetation within the channel was affected by recent fires and is burnt in places. The planting of the wash bottom and recreated slopes with native species suitable for vireo will improve wildlife habitat by establishing increased native cover. This is expected to offer shelter, foraging and nesting opportunities for a wide range of wildlife species. The habitat will also be buffered from adjacent development by the access road and trail at the top of the 2:1 jurisdictional channel slope, in addition to the non-jurisdictional upper slopes leading from the access/trail to the residential development. Please see Section 3.4a above. Impacts will remain less than significant and the project would not result in additional impacts to biological resources compared to impacts identified in the OSA PEIR.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No New Impact.

Wetlands are defined under the federal Clean Water Act as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs. There is one wetland seep and five drainage courses in the project site. Impacts to wetlands were found to be less than significant in the OSA PEIR after implementation of mitigation measure 3.4-4, which is incorporated into the proposed project.

The proposed project would impact waters of the U.S. and riparian habitats occupied by least Bell's vireo. All waters onsite are non-wetland. Based on the current acreages of jurisdictional "waters of the U.S." onsite permanent and temporary impacts total 2.46 acres (Vandermost 2010, Table 2). Permanent onsite impacts totals 1.44 acres of which approximately 0.85 acre occur in Borrego Canyon Wash and 0.59 acre occur in the unnamed non-wetland drainages, including 0.24 acre for Alton Parkway construction and 0.35 acre for the Shea/Baker planned community development (Vandermost 2010, Table 3). Temporary impacts to Corps jurisdiction total 0.87 acre from the over-excavation to construct the proposed Borrego improvements. Temporary impacts will be replaced at existing contours. Offsite permanent impacts total 0.15 acre within the upstream portion of Borrego Canyon Wash, due to construction of the inlet for the proposed Bypass Channel. Impacts to linear feet total approximately 9,000 feet. Preserved waters total 2.39 acres within Borrego Canyon Wash onsite (Vandermost 2010). Ajurisdictional delineation and impacts graphic is provided in the Shea/Baker Ranch HMMP as Figure 7 (see Initial Study Appendix B).

A 404 permit has been issues to SBRA (July 30, 2010) to permanently discharge fill into 1.59 acres of waters of the U.S. and to temporarily discharge fill into 0.87 acre of waters of the U.S., in association with the construction of Shea/Baker Ranch. The Army Corps 404 permit for the proposed project contains mitigation measures that reduce the impact to a less than significant level. As a result, there are no increased impacts to wetlands beyond those identified in the OSA PEIR and there are no new significant and unavoidable impacts.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR. . Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed Shea/Baker Ranch project. In cases where these OSA mitigation measures have been satisfied by studies prepared for this Initial Study it is so noted in *italics*,

BIO MM-4 (*OSA PEIR MMRP Mitigation Measure MM 3.4-4A*) Wetland Delineation. Prior to approval of Tentative Tract or Parcel Maps, a qualified wetland specialist shall conduct a wetland delineation in accordance with USACE methodology of all jurisdictional waters, seeps and stream channels within a site. If appropriate, this specialist shall also submit a request for a streambed alteration agreement from CDFG because CDFG also has jurisdiction over lakes and streams under Section 1600 of the Fish and Game Code. The wetland specialist shall prepare and submit a request for a jurisdictional determination to the USACE or CDFG as appropriate. Those waters not subject to the USACE jurisdiction could fall under the regulatory control of the local RWQCB. The wetland specialist shall submit the delineation documents along with the USACE jurisdictional determination to the RWQCB and request an assessment of jurisdiction. If the areas in question are subject to the USACE or RWQCB jurisdiction then the following two measures **(MM 3.4-4B and 3.4-4C)** shall be implemented as required. If the areas in question are not jurisdictional, then there is no impact to wetlands and no further action is required.

BIO MM-5 (*OSA PEIR MMRP Mitigation Measure MM 3.4-4-B*) Permitting. The wetland specialist shall prepare an application for fill of waters subject to the USACE jurisdiction as determined in MM 3.4-4-A. If appropriate, this specialist shall also submit a request for a streambed alteration agreement from CDFG because CDFG also has jurisdiction over lakes and streams under Section 1600 of the Fish and Game Code. For wetlands that are not subject to the USACE jurisdiction within the Project Area, but RWQCB has indicated that they will assert jurisdiction, an application for a Waste Discharge Requirement or Waiver of Waste Discharge Requirement shall be submitted to the local RWQCB. The regulatory requirements of contained within the Clean Water Act, the Waste Discharge Requirement, and the Streambed Alteration Agreement would mandate minimal intrusion into jurisdictional areas and compensatory mitigation for permanent impacts to these areas.

BIO MM-6 (*OSA PEIR MMRP Mitigation Measure MM 3.4-4-C*) Restoration Plan. Once an approved wetland delineation is in place, the wetland specialist shall develop a comprehensive wetland restoration plan to offset impacts to these resources. Restoration could include on- or off-site construction of wetlands, contribution of funds to a local mitigation bank, or restoration of existing yet relatively poor quality wetlands. The USACE goal is to permit no net loss of functions and values of wetland habitat. The replacement ratio of wetland acreage required to achieve this goal is a minimum of 1(new):1(old).

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No New Impact.

Borrego Wash, which passes through the site along the west site boundary, serves as a regional wildlife corridor between the foothills of the Santa Ana Mountains north of the site and a habitat preserve west of the site, formerly part of US MCAS El Toro, that is currently managed by the Federal Aviation Administration and is expected to be transferred to the USFWS. A five-foot-diameter culvert under SR-241 at Borrego Wash allows for passage of small to medium-sized wildlife including coyote and bobcat. Impacts to wildlife movement were found to be less than significant after in the OSA PEIR after implementation of mitigation measure 3.4-5, which is incorporated into the proposed project.

The part of Borrego Canyon Wash within the project site would be designated as open space. The proposed project would temporarily impact Borrego Wash, which is an important wildlife movement corridor. The

proposed project includes modification of part of Borrego Wash to restore erosion damage, to stabilize the channel and to allow for revegetation. In addition, a bypass box culvert would be built to carry heavy stream flows from upstream areas through the project site; low flows would continue to carry low flows. Borrego Wash would be available as a wildlife corridor after project completion. The FWS Section 7 consultation contains mitigation measures that reduce the impact to a less than significant level. By expanding and improving the existing wildlife habitat, the mitigation is expected to contribute to enhanced local and regional wildlife movement by allowing safe passage of a variety of wildlife species between central and coastal Orange County open space areas. The downstream corridor is being enhanced through compensatory mitigation for biological impacts on the County portion of the Alton Parkway alignment, involving the creation of a wildlife movement corridor to connect the Great Park wildlife movement corridor and Borrego Wash. Therefore, with implementation of the improvments to the Borrego Canyon Wash, no new impacts to wildlife movement or migration corridors would occur compared with impacts identified in the OSA PEIR.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measure is taken directly from the OSA PEIR with no changes made. It has been renumbered in this document for ease of reference. This mitigation measure applies to and will be implemented for the proposed project.

BIO MM-7 (*OSA PEIR MMRP Mitigation Measure MM 3.4-5*) Mitigation for Fragmentation of Habitat and Wildlife Movement Corridors. In order to minimize the fragmentation of habitat and wildlife movement corridors the City shall require the applicant to include, to the extent feasible, specific design features to maintain connectivity between remaining open spaces.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The City of Lake Forest General Plan Recreation and Resources Element (Policy 2.1) requires the City to conserve and protect important natural plant and animal communities such as areas supporting rare and endangered species, riparian areas, wildlife movement corridors, wetlands, and significant tree stands through appropriate site planning and grading techniques and re-vegetation, and soil management practices, and other resource management techniques. The City's main measure of compliance with Policy 2.1 in terms of communities supporting rare and endangered species, is participation in the NCCP. Compliance with NCCP provisions is required by OSA PEIR mitigation measure 3.4-2, which is incorporated into the proposed project. Impacts to local policies protecting biological resources were identified as less than significant in the OSA PEIR after implementation of mitigation measures 3.4-1 through 3.4-5, which are incorporated into the proposed project.

A variety of mitigation measures to retain natural areas in and around the Borrego Canyon Wash have been incorporated as part of the Alton Parkway EIR and associated regulatory permits.

As described in Section 3.2(d)), a tree assessment of the site was conducted by Dudek in March 2011 which identified both native and non-native types of trees. Specifically, 47 Coast live oak (Quercus agrifolia) trees are located within the project site and will be impacted by development. While Coast live oak trees are not locally protected and the existing tree groupings on site do not constitute a forest land, the Area Plan includes measures consistent with state-level guidelines detailed in Public Resources Code Section 21083.4 for the replanting replacement of these trees at a 2:1 ratio.

The project would involve removal of 836 live eucalyptus trees from the site. Most of the eucalyptus trees onsite are in poor condition; of the 1,202 eucalyptus onsite, 324 are dead. City of Lake Forest Municipal

Code Chapter 6.20 requires a tree cutting permit for removal of eucalyptus trees. The project applicant would obtain a tree cutting permit from the City before removing eucalyptus trees.

No new impacts to biological resources compared to impacts identified in the OSA PEIR would result from development of the proposed project.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No New Impact. As discusses in Section 3.4a, the project site is in the plan area of the NCCP and the project's consistency with this NCCP was examined in the FWS Section 7 consultation and the CDFG's Endangered Species Act Consistency Determination. Compliance with provisions of the NCCP is required by mitigation measure 3.4-2 of the OSA PEIR, which is incorporated into the proposed project. The development area of the proposed project is within the development footprint of Site 1 analyzed in the OSA PEIR. No additional impacts to the NCCP would occur compared with those identified in the OSA PEIR.

3.5 CULTURAL RESOURCES

The analysis in this section is based in part on the following technical reports:

- *Archaeological and Paleontological Programmatic Assessment of the Shea/Baker Ranch Planned Community Project, City Of Lake Forest, Orange County, California*, Cogstone, October 2011
- *Phase II Archaeological Evaluation, CA-ORA-1004 & CA-ORA-1150 Proposed Baker Ranch Development Project Lake Forest, California,* BonTerra Consulting, March 2009. CONFIDENTIAL
- *Phase I Cultural Resources Reconnaissance Survey, Proposed Alton Parkway Extension Project, Including Baker Ranch, Lake Forest, California,* BonTerra Consulting, August 2008

Copies of the non-confidential studies are included in the Technical Appendices (Appendix C).

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

No Impact. Section 15064.5 defines historic resources as resources listed or determined to be eligible for listing by the State Historical Resources Commission, a local register of historical resources, or the lead agency. Generally a resource is considered to be "historically significant," if it meets one of the following criteria:

i) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

ii) Is associated with the lives of persons important in our past;

iii) Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

iv) Has yielded, or may be likely to yield, information important in prehistory or history.

No impact to historic resources was identified in the OSA PEIR. As discussed in the OSA PEIR, there are no historical resources listed onsite in the California Register of Historic Resources, the National Register of Historic Places, or a local register.

There are two existing residences onsite (one of the residences previously on the site has been demolished), as well as several buildings associated with the nursery operation onsite.

A historical topographic map from 1902 and revised in 1946 did not show any structures within or in proximity to the project area. (Cogstone 2011) According to the 1946 aerial photograph of the area, the earliest available, the project area is completely undeveloped, save for a series of dirt roads. The project site was vacant, or used as pasture land, until the late 1950's or early 1960's, when parts of the site were planted with citrus orchards. No buildings appear on aerial photographs of the site through 1953; three residences associated with the citrus orchard operation appear on an aerial photograph from 1968. (Lexington Geoscience 2011) A 1972 aerial photograph demonstrates that the project area has been partially graded and is largely used for a nursery. At least two buildings are visible within the project area; the same buildings are visible on the most recent aerial photograph. (Cogstone 2011) The project area looks much the same by 1980. The two existing residential buildings, which date from the mid-to-late 1960s, are less than 50 years old and have not been identified as historical resources. There are no impacts to historic resources and this topic requires no further analysis.

A search for archaeological and historic records was completed as part of an archaeological and paleontological assessment for the project site (Cogstone 2011). The record search included the project boundaries and a one-mile radius around the project boundaries. Sources consulted include the National Register of Historical Places, California Register of Historic Resources, California Inventory of Historic Resources, California Historical Landmarks, and California Points of Historical Interest. Five previously recorded historical sites are within a one-mile radius, but not within the project boundaries, including three historical archaeological sites and two built-environment resources, 42 prehistoric archaeological sites, 26 prehistoric isolates and two sites of an unknown type. Previously, 14 archaeological studies were conducted within parts of the project boundaries, and 55 studies were conducted within a one-mile radius of the current project boundaries. None of the previously-recorded resources are listed as eligible for the National Register of Historic Places. There are no impacts to historic resources compared to those identified in the OSA PEIR and this topic requires no further analysis.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

No New Impact. A search for archaeological and historic records was completed as part of an archaeological and paleontological assessment for the project site (Cogstone 2011). The record search was performed for the project boundaries plus a one mile radius for prehistoric and historic resources. The records search determined that there are four known cultural resources within the project area boundaries. These include three prehistoric lithic artifact scatters and one prehistoric site milling site. The first prehistoric site (P-30-000040) was originally recorded in 1949 and has never been updated. The only information is a statement that "Mortars have been plowed up by Dan Osterman". No resources have been reported in this location during subsequent work. The mortars are presumed to have been a cache for processing plants that occurred seasonally. The ground surface of this site was covered by gravel and being used as a nursery in 1988 (Bissell 1988). Maxon (2008) stated that the site had been completely destroyed. As this site has no potential to contribute information new to history, no further work is required for this site.

The second prehistoric site (P-30-000758) was situated on a knoll projecting into Borrego Canyon. Sparse surface scatter consisted of a scraper, cores, utilized flakes and a mano. The site was originally recorded in

1978 and updated in 1981and again in 1996. The 1981 update expanded the boundaries of the site, noting additional artifacts such as a metate fragment, scraper planes, hammerstones and debitage (ARMC 1981). The site is partially on private property and partially within the boundaries of the former MCAS El Toro.

In 1988 a survey noted the site appeared to have been graded and was overgrown with heavy brush. No artifacts could be seen (Bissell 1988). Survey in 1992 for a water project relocated the site and required testing before further impacts (Chambers 1992). In 1994 a portion of the site was tested and found to have a depth of over 1.1 meters (Demcak 1994a). Subsequently data recover was conducted on that portion of the site (Demcak 1994b). The site was determined to represent millingstone period site. A discoidal and metate fragment (ground stone) were recovered along with chipped stone tools and debitage. Demcak specifically noted that intact portions of the site remained but were outside the impact area of the 1994 project. Maxon (2008) surveyed the site for the proposed Alton Parkway extension and stated that the site had been mitigated through data recovery (contra Demcak) although artifacts were still present on the surface. A survey in 1997 for MCAS El Toro found that the portion of the site within the boundaries of the base displayed integrity and still had data potential (Allen 1997). Extension of Alton Parkway may impact portions of this site that still have data potential and have not been adequately mitigated. However, this site is included in the Final EIR 585 for the Alton Parkway Extension Project (State Clearinghouse Number 2002121105) and is part of that project. The Alton Parkway Extension EIR found that mitigation measures provided for monitoring during grading activities would reduce the impacts to a less than significant level.

The third prehistoric site (P-30-001004 also known as CA-ORA-1004), was recorded in 1981as a small scatter of a few flakes, a core and a hammerstone. In 1988 a survey reported the site had been damaged by road construction and planting of avocado trees. In spite of extensive leaf cover on the ground, over 50 lithic artifacts were observed (Bissell 1988). Maxon (2008) stated that no artifacts were observed on the surface but that given minimal disturbance the site should be tested. Test excavations (Maxon 2009) did not recover any artifacts. As this site has no potential to contribute information new to history, no further work is required for this site.

The final prehistoric site (P-30-001150) was recorded as a lithic scatter in 1988. Survey in 2008 (Maxon 2008) stated that lithic flakes were present. Testing (Maxon 2009) did not recovery any artifacts. As this site has no potential to contribute information new to history, no further work is required for this site.

In addition to the four prehistoric sites, five historical sites, including three historical archaeological sites and two built-environment resources, 42 prehistoric archaeological sites, 26 prehistoric isolates and two sites of an unknown type were previously recorded within a one-mile radius of the project boundaries. None of the previously-recorded resources are listed as eligible for the National Register of Historic Places.

Previously, 14 archaeological studies were conducted within parts of the project boundaries, and 55 studies were conducted within a one-mile radius of the current project boundaries.

A sacred lands record search was requested by Cogstone staff from the Native American Heritage Commission on August 3, 2011. On August 5, the Commission responded, stating there were no known sacred lands within the APE boundaries (Cogstone 2011); however, they requested that 15 Native American tribes or individuals be contacted for further information. Letters requesting information on any known heritage sites, and containing maps and project information were sent to the 15 Native American contacts on August 8, 2011. Mr. David Belardes and Ms. Joyce Perry of the Acjachemen Nation both contacted Cogstone and expressed their concerns about the project; they stated that the project area is very sensitive and that sites in the vicinity of the project area have been found not only on the surface but also 30 to 40 feet below surface. They strongly recommend a monitor be present for all ground disturbances. No other responses

were received. Mitigation measure CR MM-1 ensures that Native American representatives shall be retained to observe activities if prehistoric archaeological sites are discovered during monitoring of earthmoving.

Twelve archaeological sites were identified on the seven OSA project sites in the OSA PEIR. The specific nature and location of those sites was not disclosed for the protection of those sites and resources. Impacts to archaeological resources were identified as less than significant, after implementation of mitigation measures 3.5-1 through 3.5-4, in the OSA PEIR. Mitigation measures 3.5-1 through 3.5-4 are incorporated into the proposed project.

There were 83 archaeological sites (including 25 isolated artifacts) within 0.5 mile of the seven properties analyzed in the OSA PEIR. There were 12 archaeological sites on the seven properties; none of the isolated artifacts were on the properties (EIP Associates 2008). The specific locations of the archaeological sites were not published for protection of those sites. As with all development in areas that have known sensitive archaeological sites, there is potential for artifacts or burials to be uncovered during site grading. As with the OSA PEIR, project impacts to archaeological resources would be potentially significant without mitigation. Implementation of the OSA PEIR mitigation measures 3.5-1 through 3.5-4 would reduce such impacts to less than significant. Therefore, the proposed project does not result in any new impacts compared to those identified in the OSA PEIR.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures (3.5-1 through 3.5-4) are taken directly from the OSA PEIR. Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed Shea/Baker Ranch project.

CR MM- 1 (OSA PEIR Mitigation Measure 3.5-1). Prior to issuance of a grading permit for any site within the Project Area, a qualified archaeologist shall be retained by the applicant for that grading permit to provide professional archaeological services. The archaeologist shall be present at the pre-grading conference to establish procedures for archaeological resource surveillance. Those procedures shall include provisions for temporarily halting or redirecting work to permit sampling, identification and evaluation of resources deemed by the archaeologist to potentially be historical resources or unique archaeological resources under CEQA. If, before grading, any portions of the property subject to the grading permit have been identified as sites, which may have such resources present and may be impacted by development, the archaeologist shall conduct a site survey and records search and such further examinations as may be needed to assess the significance of the resources. If the archaeological resource is determined to be a unique archaeological resource, options for avoidance of preservation in place shall be evaluated and implemented if feasible. In the event that avoidance or preservation in place is infeasible and the archaeologist determines that the potential for significant impacts to such resources exists, a data recovery program shall be expeditiously conducted. The archaeologist also shall conduct on-site archaeological monitoring for the grading operation. Should historical resources or unique archaeological resources be discovered during the grading operation, grading activities shall be modified to allow expeditious and proper analysis and/or salvage of the resources. Disposition of the resources shall be within the discretion of the City of Lake Forest. **If prehistoric archaeological sites (not isolates) are discovered during monitoring of earthmoving, Native American representatives shall be retained to observe activities and shall contribute to discussion of any treatment proposed.**

CR MM-2 (OSA PEIR Mitigation Measure 3.5-2).The qualified archaeologist **retained** shall prepare monthly progress reports to be filed with the site developer(s) and the City of Lake Forest.

CR MM-3 (OSA PEIR Mitigation Measure 3.5-3). Artifacts recovered shall be prepared, identified, and catalogued before donation to the accredited repository designated by the City of Lake Forest. State of California Guidelines for the Curation of Archaeological Collections shall be consulted regarding the treatment of recovered artifacts. Any artifacts determined to be insignificant shall be offered to local schools for use in educational programs.

CR MM-4 (OSA PEIR Mitigation Measure 3.5-4). The qualified archaeologist **retained** shall prepare a final report to be filed with the site developer(s), the City of Lake Forest, and the South Central Coastal Information Center. The report shall include a list of specimens recovered, documentation of each locality, interpretation of artifacts recovered and shall include all specialists' reports as appendices.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No New Impact. Fossils are known within the project boundaries, as well as from previous directly adjacent projects located in the late Miocene to Pliocene Oso Member of the Capistrano Formation. See Figure 16, *Fossil Localities*. Baleen whales and sabertoothed salmon have been the most frequent finds with lesser quantities of other types of whales including dolphins, a variety of pinnipeds, sea cows, sharks including giant white, great white and bonito, a variety of fishes, sea turtle, giant toothed pelican, and some land animals including fossil elephant, horse, camel and tortoise. Any excavations in the Oso have potential to create adverse impacts on significant vertebrate paleontological resources. In addition, deep excavations into the Pleistocene terrestrial sediments have potential to impact widely spaced and unpredictable occurrences of terrestrial fossils.

As with the OSA PEIR, impacts to paleontological resources would be potentially significant without mitigation. Implementation of OSA PEIR mitigation measures 3.5-5 through 3.5-8 would reduce impacts to paleontological resources to less than significant. Therefore, the proposed project does not result in any new impacts compared to those identified in the OSA PEIR.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures (3.5-5 through 3.5-8) are taken directly from the OSA PEIR Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed Project.

CR MM-5 (OSA PEIR Mitigation Measure 3.5-5). Before issuance of a grading permit, a qualified paleontologist shall be retained by the site developer(s) to provide professional paleontological services. **Prior to commencement of construction, the paleontologist will develop a research design, based on current information, which will include specific research questions and what types of data (fossils, micropaleontological analysis, etc) will permit those questions to be answered. The research design should be sufficient to ensure that future fossils recovered can be placed into a regional context and contribute new information to science. During** ~~Specifically, during~~ grading activities, the qualified paleontologist shall conduct on-site paleontological monitoring for the project site. Monitoring shall include inspection of exposed surfaces and microscopic examination of matrix to determine if fossils are present. The monitor shall have authority to divert grading away from

exposed fossils temporarily in order to recover the fossil specimens. Cooperation and assistance from on-site personnel will greatly assist timely resumption of work in the area of the fossil discovery. **Fossil localities discovered require specific information be recorded on location and elevation of fossils, taking of samples for analysis, stratigraphic column be developed and fossils must be identified by qualified experts.**

CR MM-6 (OSA PEIR Mitigation Measure 3.5-6). The qualified paleontologist **retained** shall prepare monthly progress reports to be filed with the site developer(s) and the City of Lake Forest.

CR MM-7 (OSA PEIR Mitigation Measure 3.5-7). Fossils recovered shall be prepared, identified, and cataloged before donation to an accredited repository designated by the City of Lake Forest. **The principal paleontologist will develop a research design to place newly and previously discovered fossils from the project area into a regional context and will specifically include research questions to be answered during fossil recovery work.**

CR MM-8 (OSA PEIR Mitigation Measure 3.5-8). The qualified paleontologist **retained** shall prepare a final report to be filed with the site developer(s) and the City of Lake Forest. The report shall include a list of specimens recovered, documentation of each locality, interpretation of fossils recovered and shall include all specialists' reports as appendices.

d) Disturb any human remains, including those interred outside of formal cemeteries?

No Impact. Impacts to human remains were found to be less than significant in the OSA PEIR. California Health and Safety Code Section 7050.5 requires that in the event that human remains are discovered within the project site, disturbance of the site shall remain halted until the Coroner has conducted an investigation into the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. Treatment of Native American human remains is also subject to protections specified in California Public Resources Code Section 5097.98, as outlined in the OSA PEIR. The project would comply with existing law and no new significant impacts to human remains would occur.

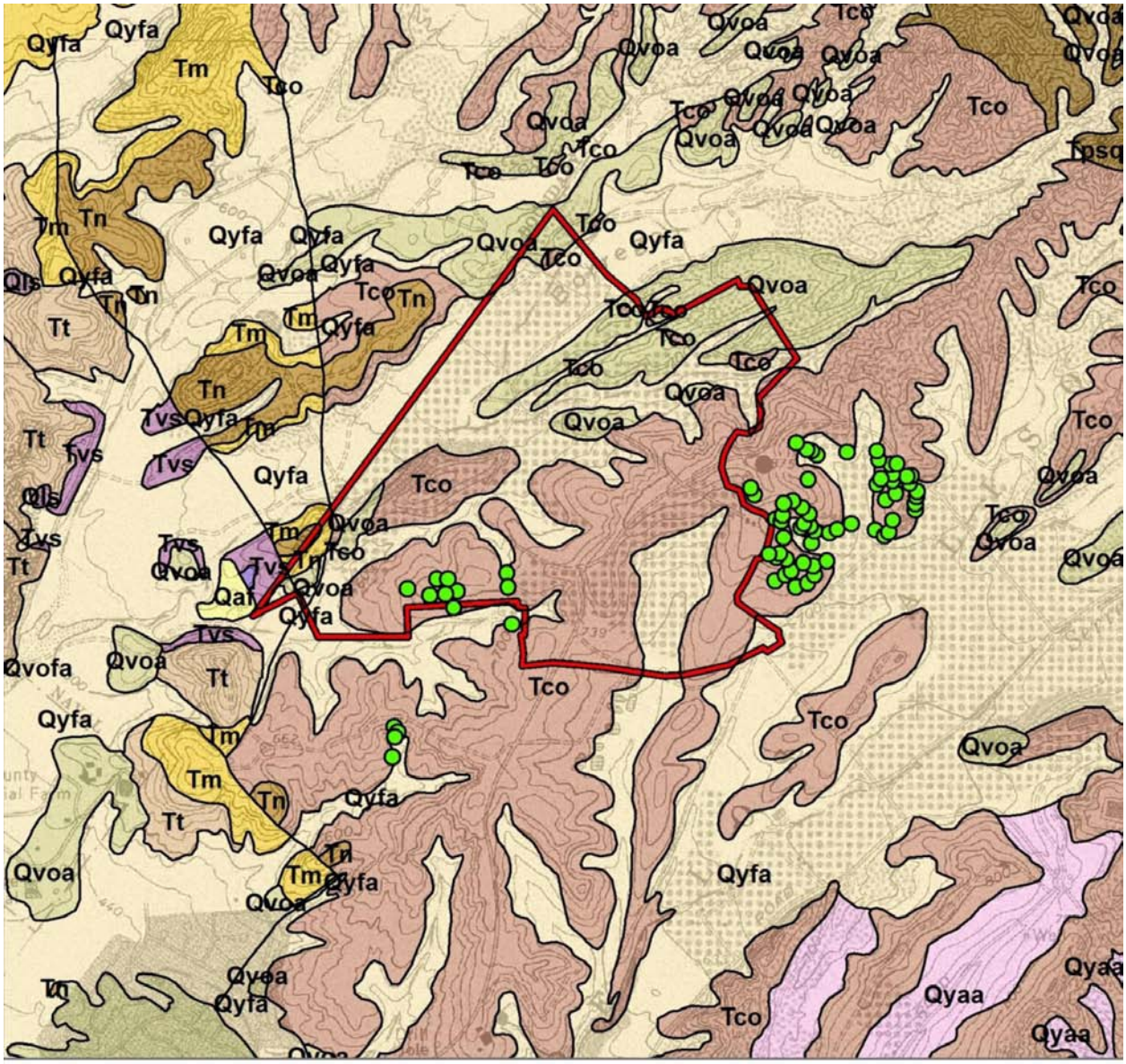
3.6 GEOLOGY AND SOILS

Information in this section is based partly on the following technical reports:

- *Geotechnical Review of Revised Tentative Tract 16466 Map, Baker Ranch, Lake Forest, California*, NMG Geotechnical Inc, March 2011
- *Geotechnical Review of the Western Edge of the proposed Baker Ranch Development, Including Borrego Wash Improvements and the Bypass Channel, Tentative Tract 16466, Baker Ranch, Laker Forest, Orange County, California,* NMG Geotechnical Inc, August 2011
- *Supplemental Remarks Regarding Liquefaction Potenital and Related Impacts in Tentative Tract 16466, Baker Ranch, Lake Forest, Orange County, California*, NMG Geotechnical Inc, November 2011

Copies of these studies are included in the Technical Appendices to this Initial Study (Appendix D).

Fossil Localities



Shea/Baker Ranch Project

Fossil Localities

Project Area

0 0.25 0.5 Miles

1:24,000

N

Geology Legend

Qyfa: Young alluvial fan deposits

Qvoa: Very old axial channel deposits

Tco: Capistrano Formation, Oso Member

Tm: Monterey Formation

Modified from Morton and Miller 2006

0 0.5

Scale (Miles)

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Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to geology and soils:

PPP GEO-1 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G1*) Prior to the issuance of precise grading permits, the applicant shall prepare and submit a final (precise) grading plan to the Building Division of the Development Services Department showing building footprints, new and revised pads and elevations of finished grades, drainage routes, retaining walls, erosion control, slope easements, structural best management practices conforming to the approved water quality management plan, and other pertinent information.

PPP GEO-2 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G2*) Prior to the issuance of precise grading permits, the applicant shall in a manner meeting the approval of the City Engineer:

- Design provisions for surface drainage; and
- Design all necessary storm drain facilities extending to a satisfactory point of disposal for the proper control and disposal of storm runoff; and
- Dedicate the associated easements to the City of Lake Forest, if determined necessary by the City Engineer.
- Prior to the issuance of any certificates of use and occupancy said improvements shall be constructed in a manner meeting the approval of the City Engineer.

PPP GEO-3 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G3*) Prior to approval of the final design plans and issuance of a grading permit, the applicant shall conduct a site-specific geotechnical investigation for the entire site and prepare a report that fully assesses the geologic and soil conditions of the site. As part of the report preparation, soil sampling and any geotechnical testing will be completed at each location where structures are to be erected. The report shall provide grading and structural design recommendations for avoiding liquefaction, subsidence or collapse for each of the proposed structures. The recommendations shall be implemented by the Project Applicant.

PPP GEO-4 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G4*) During project grading and construction activities, the following measures shall be implemented by the applicant as monitored by the Director of Development Services and Director of Public Works/City Engineer.

a) Normal watering procedures or other dust palliative measures shall be followed during earth moving and construction operations to minimize fugitive dust emissions in compliance with SCAQMD Rule 403. Soil binders shall be spread on site, unpaved roads, and parking area in compliance with Rule 403.

b) Where practical, heavy duty construction equipment shall be kept on-site when not in operation to minimize exhaust emissions associated with vehicles entering and exiting the project site.

c) Restrict traffic speeds on all unpaved road to 15 miles per hour or less, and provide a flag person to properly guide traffic and ensure safety at the construction site.

d) Suspend all grading operations when wind speeds exceed 25 miles per hour and during second stage smog alerts.

e) Comply with SCAQMD Rules 402 and 403 which state that no dust impacts off-site sufficient to be called a nuisance are created and restrict visible emissions from construction and grading, respectively.

f) Use low emission mobile construction equipment (i.e., tractors, scrapers, dozers, etc.) where practical. Shut off engines when not in use.

g) Maintain construction equipment in peak operating condition to reduce operating emissions.

- Use low sulfur fuel for equipment to the extent feasible.
- Use electric equipment whenever practicable.
- Moisten soil to grading to 12% soil moisture.
- Water exposed surfaces at least twice daily under calm conditions and as often as needed on windy days when winds are less than 25 miles per hour or during dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site.
- Treat any area that will be exposed for extended periods with a soil conditioner to stabilize soil or temporarily plant with vegetation.
- Wash mud-covered tires and under-carriages of any trucks leaving construction sites.
- Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing project sites.
- Provide for permanent sealing of all graded areas, as applicable, at the earliest practicable time after soil disturbance.

PPP GEO-5 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G5)* This project necessitates the construction of public and/or private infrastructure improvements. Prior to the issuance of preliminary or precise grading permits, the applicant shall construct, or enter into an agreement and post security, in a form and

amount acceptable to the City Engineer, guaranteeing the construction of public and/or private improvements, in conformance with applicable City standards and the City's Capital Improvement Policy, including but not limited to:

a) Street improvements including, but not limited to: pavement, curb and gutter, medians, sidewalks, drive approaches, street lighting, signing, striping as follows:

b) Traffic signal systems, interconnect traffic signal preemption devices and other traffic control and management devices

c) Storm drain facilities

d) Subdrain facilities

e) Landscaping and computerized irrigation control system (for all public streets, parks and public areas).

f) Sewer, reclaimed and/or domestic water systems, as required by the appropriate sewer and water districts as well as the Orange County Fire Authority when appropriate.

g) Riding, hiking and bicycle trails adjacent to or through the project site.

h) Undergrounding of existing overhead and proposed utility distribution lines.

i) Transit-related improvements depicted on the approved tentative map

Plans for improvements, including proposed and relocated utility lines, shall be approved by the Public Works Director/City Engineer based on the City's ordinances, standards, and policies, including, but not limited to, those design and construction standards adopted by the City or otherwise reasonably determined by the Director to be applicable to the project. Plans for signing, striping, and other traffic control devices shall be approved by the City Traffic Engineer. Water improvement plans shall be approved by the Fire Marshal, the local water district, and the Public Works Director/City Engineer. The water distribution system and appurtenances shall conform to the applicable laws and adopted regulations enforced by the Orange County Health Department. Public sewer and reclaimed water improvement plans shall be approved by the local sewer agency and the Public Works Director/City Engineer. The requirement for the reclaimed water line for irrigation is contingent upon an existing line within reasonable proximity to the site. Construction of improvements shall be under the inspection of the Public Works Department.

PPP GEO-6 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G6*) Prior to issuance of any permit, any easement that lies within or crosses rights-of-way proposed to be deeded or dedicated to the City, shall be subordinated by the applicant to the City prior to City acceptance of the rights-of-way, unless otherwise exempted by the Director of Public Works/City Engineer based on the City's ordinances, standards, and policies, including, but not limited, to those design and construction

standards adopted by the City or otherwise reasonably determined by the Director to be applicable to the project.

PPP GEO-7 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G7*) Prior to issuance of a grading permit, a recordable instrument providing for reciprocal ingress and egress access easements between and among the parcels with access via private drives shall be submitted by the applicant to the City of Lake Forest for review and approval of the City Attorney, Director of Development Services and the Director of Public Works/City Engineer. The instrument shall be approved if it is appropriate recordable form, and adequately provides for reciprocal access in a manner consistent with the City's ordinances, standards, and policies, including, but not limited, to those public design and construction standards adopted by the City or otherwise reasonably determined by the Directors to be applicable to the project.

PPP GEO-8 (*OSA PEIR MMRP Legal Requirements for Geology, Soils and Mineral Resources*) Compliance with California Building Code Seismic Zone 4 Standards.

PPP GEO-9 (*OSA PEIR MMRP Legal Requirements for Geology, Soils and Mineral Resources*) Site specific review by California Certified Engineering Geologist.

PPP GEO-10 (*OSA PEIR MMRP Legal Requirements for Geology, Soils and Mineral Resources*) Implementation of National Pollution Discharge Elimination System (NPDES) Best Management Practices (BMPs).

PPP GEO-11 (*OSA PEIR MMRP Legal Requirements for Geology, Soils and Mineral Resources*) Preparation and implementation of Storm Water Pollution Prevention Plan (SWPPP).

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No New Impact. The Alquist-Priolo Earthquake Fault Zoning Act was passed to prevent construction of buildings used for human occupancy on the surface of active faults, in order to minimize the hazard of surface rupture of a fault to people and buildings. Before cities and counties can permit development within Alquist-Priolo Earthquake Fault Zones, geologic investigations are required to show that the sites are not threatened by surface rupture from future earthquakes. The project site is not in an Alquist-Priolo Earthquake Fault Zone; the nearest such Zone to the site is approximately 13.8 miles north of the site (CDMG 2000). An active fault is a fault that has had surface displacement within the last 11,000 years. No evidence of active faulting was observed during prior geotechnical work on the site. The nearest known faults to the site are two unnamed faults, one about 0.5 mile north of the site and one about 0.75 mile southwest; neither of those faults is classified as active by the California Geological Survey (CGS 2011). Project development would not result in hazards to persons or structures due to surface rupture of a known fault, and no new impact would occur compared to those identified in the OSA PEIR.

ii) Strong seismic ground shaking?

No New Impact. There are many known faults in the region. The fault likely to produce the strongest ground shaking onsite is the San Joaquin Hills Blind Thrust, capable of generating an earthquake of maximum moment magnitude 6.6. Moment magnitude is a measure of the amount of energy released in an earthquake, and is a logarithmic scale, such that each one-point increase in magnitude represents a tenfold increase in amplitude of the waves as measured at a specific location, and a 32-fold increase in energy. Seismic design parameters based on the 2010 California Building Code (CBC) are provided in the geotechnical reconnaissance and update report; the project would be required to comply with those parameters in design of proposed structures.

Impacts from ground shaking were identified as less than significant in the OSA PEIR**.** The proposed project site is the same as Site 1 in the OSA PEIR. The intensity of development in the proposed project would be less than that proposed for Site 1 in the OSA PEIR. Therefore, no new impacts would occur compared to those identified in the OSA PEIR.

iii) Seismic-related ground failure, including liquefaction?

No New Impact. Liquefaction refers to loose, saturated sand or silt deposits that behave as a liquid, and lose their load-supporting capability, when strongly shaken. Loose granular soils and silts that are saturated by relatively shallow groundwater are susceptible to liquefaction. Parts of the northern, western, and central portions of the project site are in zones of required investigation for liquefaction, as designated by the California Geological Survey.

Impacts arising from liquefaction were found to be less than significant, after compliance with regulatory requirements, in the OSA PEIR.

The project geotechnical investigation evaluated liquefaction potential. The majority of the site will expose bedrock or grading will result in fill over bedrock and not have liquefiable soils below planned improvements and construction. Where liquefiable soils have been identified, the potential for loss of bearing capacity and surface disruptions of ground due liquefied soil is considered low to nil since the liquefiable layers will be 20 to 40 feet below the finished ground surface. Following remedial removals and site grading, most of the over burden soil will be compacted fill that will mitigate the potential for liquefaction related surface manifestations.

A significant area within the mapped liquefaction hazard zone has recently been mitigated by grading performed by the City of Lake Forest for the Alton Parkway extension. NMG has provided second-party geotechnical review of this work to assure the remedial grading performed was compatible with the future residential development (NMG 2011). Regarding ground settlement due to liquefaction related soil consolidation, exploration and settlement calculations for the Borrego Wash areas indicate that potential settlements from liquefaction will be within typically accepted limits of the proposed development following remedial removals and other site grading. While additional study and analysis is recommended for the other areas of the tract, future remedial removals, as well as foundation design measures, can be implemented to mitigate the settlement potential to acceptable levels in both the wash area as well as residential areas. Liquefaction related lateral spread and flow failure potential is primarily along the Borrego Wash edge of the tract. The potential is either low or mitigated with the recommended designed shear key (NMG, 2011a). In summary, NMG concludes that liquefaction related hazards are either not significant impacts to development or can be eliminated with the remedial grading and/or foundation recommendation contained the in the Geotechnical Study. PPP GEO-3, which will be a condition of approval, requires that the project applicant implement all grading and structural recommendations of

the Geotechnical Study. As such, impacts will be less than significant and there are no new impacts compared to the OSA PEIR.

iv) Landslides?

No New Impact. There are no landslides mapped onsite, and landslides onsite were not found during previous geotechnical investigations or during grading for the Alton Parkway extension. In addition, the site is not mapped within a zone of required investigation for earthquake-induced landslides by the California Geological Survey. Thus, the risk of earthquake-induced landslide onsite is considered low. Impacts arising from liquefaction were found to be less than significant in the OSA PEIR, after compliance with regulatory requirements. No new impacts would occur compared to those identified in the OSA PEIR.

b) Result in substantial soil erosion or the loss of topsoil?

No New Impact. Impacts of project construction on soil erosion were identified in the OSA PEIR as less than significant after compliance with regulatory requirements. The statewide regulatory program governing potential water pollution from construction sites, the General Permit for Storm Water Discharges from Construction and Land Disturbance Activities ("Construction General Permit"), was updated by the State Water Resources Control Board (SWRCB) in 2009. The project would comply with the Construction General Permit by preparing and implementing a Stormwater Pollution Prevention Plan (SWPPP) specifying Best Management Practices (BMPs) that the project would use to minimize or avoid water pollution during project construction, including pollution through soil erosion. Requirements of the Construction General Permit issued in 2009 changed substantially compared to the previous Construction General Permit issued in 1999 (Order No. 99-08-DWQ). For example, the 2009 Construction General Permit requires projects to estimated the risk of sedimentation a project poses to receiving waters and downstream waters. The OSA PEIR stipulated that the SWPPP is a "live" document that must be kept current by the person responsible for its implementation. The project would comply with the Construction General Permit as updated by the SWRCB. No new significant and unavoidable impact will occur as a result of the proposed project. Specific BMPs to be used to minimize soil erosion are discussed in this Initial Study in Section 3.9, *Water Resources*.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

No New Impact. Hazards related to unstable soils were found to be less than significant, after compliance with regulatory requirements, in the OSA PEIR. Site soils prone to collapse or consolidation, and unsuitable for supporting structures, were found onsite, ranging from two to 40 feet below ground surface (bgs) in depth. As discussed in Section 3.6aiii, no significant and unavoidable impacts are anticipated and impacts will remain less than significant. No new impacts would occur compared to those identified in the OSA PEIR.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No New Impact. The expansion potential of existing site soils was found to be low to very low in the geotechnical review for the proposed project. Hazards arising from expansive soils were identified in the OSA PEIR as less than significant after compliance with regulatory requirements. The project would comply with recommendations in the project geotechnical review. PPP GEO-3, which will be a condition of approval, requires that the project applicant implement all grading and structural recommendations of the

Geotechnical Study. As such, impacts will be less than significant and there are no new impacts compared to the OSA PEIR. No new significant impact would occur.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The project would include installation of sewer laterals connecting to sewer mains in surrounding roadways, and would not involve the use of alternative wastewater disposal systems. The project would have to comply with PPPs GEO-1 through 5. No impact would occur.

3.7 GREENHOUSE GAS EMISSIONS

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Potentially Significant Impacts. AB 32, the Global Warming Solutions Act, was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of greenhouse gas (GHG) emissions. In addition to the requirements under AB 32 to address GHG emissions and global climate change in general plans and CEQA documents, Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines for addressing global warming emissions and mitigating project-generated GHG emissions. OPR transmitted the proposed guidelines to the California Natural Resources Agency (CNRA) and the guidelines were adopted on December 30, 2009. The amended CEQA Guidelines became effective on March 18, 2010.

Construction and operation of project development would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the project's operation (as opposed to its construction). The proposed project would result in an increase in GHG emissions from transportation sources, offsite energy production required for onsite activities, natural gas used on site for heating and cooking, water use, and waste disposal.

In the OSA PEIR, the City concluded that OSA contributions of GHG emissions are significant and unavoidable. However, since certification of the OSA PEIR, the new CEQA Guidelines for GHG were adopted. Additionally, no project level analysis for GHG emissions was conducted for Site 1. Therefore, an analysis will be prepared as part of the Draft EIR to calculate GHG emissions generated by the proposed project and to compare the impacts of the proposed project to OSA PEIR Site 1 emissions. The calculations will use the most recent version of the CalEEMod model (Version 2011.1.1).

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Potentially Significant Impacts. The proposed project would generate GHG emissions. As part of the Draft EIR for the Shea/Baker Ranch project, a GHG analysis will be prepared to analyze the extent to which the project would comply or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions and strategies to help California reach the emission reduction targets.

3.8 HAZARDS AND HAZARDOUS MATERIALS

Information in this section is based partly on the following technical report:

- *Phase I Environmental Site Assessment Baker Ranch Property Lake Forest, California 92630,* Lexington Geoscience, March 2011.

A copy of this study is included in the Technical Appendices to this Initial Study (Appendix E).

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to hazards:

PPP HAZ-1 (*OSA PEIR MMRP Hazards Standard Condition*) Compliance with applicable federal, state, and local laws regulating generation, handling, transportation and disposal of hazardous materials and waste.

PPP HAZ-2 (*OSA PEIR MMRP Hazards Standard Condition HZM1*) Prior to issuance of a grading permit, the applicant shall provide a plan showing the placement of underground storage tanks for the approval of the Development Services Department.

a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

No New Impact. Project construction would involve the use and transport of limited amounts of hazardous materials, such as paints and other coatings; fuels, lubricants, and greases; pesticides and herbicides; and cleaning and maintenance products such as solvents. Operation of the proposed residential units would involve the use of small amounts of hazardous materials for cleaning and maintenance purposes, such as paints, cleaning materials, and pesticides. The specific types of commercial uses that would be developed onsite have not been determined; however, given the amount of proposed commercial uses (25,000 square feet) compared to the number of proposed residential units (2,379 units), it is expected that proposed commercial uses would be neighborhood-serving commercial uses that would not use, transport, or dispose of substantial amounts of hazardous materials. Impacts arising from the routine use, transport, or disposal of hazardous materials were found to be less than significant, after compliance with regulatory requirements, in the OSA PEIR. No new substantial impact is expected compared to the Site 1 project analyzed in the OSA PEIR.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

No New Impact. Hazardous materials such as fuels, greases, paints, and cleaning materials would be used during project construction. The project applicant would be required to comply with existing local, state, and federal regulations, which would reduce potential impacts arising from accidental releases of hazardous materials. For example, all spills or leakage of petroleum products during construction activities are required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable state and local regulations regarding the cleanup and disposal of the contaminant released. All contaminated waste encountered would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility. Additionally, the proposed project would be constructed and operated with strict adherence to all emergency response plan requirements set forth by the City of Lake Forest and the Orange County Environmental Health Division[2]. Impacts resulting from accidental release of hazardous

[2] The Orange County Environmental Health Division is the Certified Unified Program Agency (CUPA) for the County of Orange, including the City of Lake Forest; the Certified Unified Program coordinates and makes consistent enforcement of several federal and state regulations governing hazardous materials.

materials were determined to be less than significant in the OSA PEIR. No new significant impact would occur.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. There are no existing or proposed schools within 0.25 mile of the project site. The OSA PEIR identified a potential school location within Site 1; however, the Shea/Baker Ranch project does not include a school. The OSA PEIR reasoned that if a school was built, depending on the timing and order of development, the potential may exist for exposure of students to hazardous emissions, materials, substances, or wastes. Implementation of OSA PEIR mitigation measure MM 3.7-2 requiring additional CEQA review for significant impacts related to environmental health hazards to students from the location of a school on Site 1, this impact would be less than significant. No school is proposed and MM 3.7-2 is not applicable at this time. There are no impacts.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No New Impact. California Government Code Section 65962.5 requires the compiling of lists of the following types of hazardous materials sites: hazardous waste facilities; hazardous waste discharges for which the State Water Quality Control Board has issued certain types of orders; public drinking water wells containing detectable levels of organic contaminants; underground storage tanks with reported unauthorized releases; and solid waste disposal facilities from which hazardous waste has migrated. No documented hazardous materials sites of any of the types specified in Government Code Section 65962.5 were identified on the project site in a regulatory database search conducted as part of the Phase I Environmental Site Assessment ("ESA") for the proposed project (Lexington Geosciences 2011).

Impacts related to hazardous materials sites of the types specified in Government Code Section 65962.5 were found to be less than significant, with implementation of Mitigation Measure 3.7-1, in the OSA PEIR. The mitigation measure requires CEQA review of potential hazards related to a composting facility, R & S Soil Products, Inc., formerly located on the project site. The ESA for the proposed project could not locate the address provided for the reported composting facility, 20200 Bake Parkway; in addition, the address, if it existed, would be on the southeast side of Bake Parkway opposite the roadway from the project site.[3] The ESA concluded that the reported former composting facility would not be a recognized environmental condition for the project site.[4] Evaluation of the reported former composting facility in the project ESA complies with Mitigation Measure 3.7-1 in the OSA PEIR. No new substantial impact would occur compared to the OSA PEIR.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measure is taken directly from the OSA PEIR:

[3] The 20200 Bake Parkway address was in a listing on the State Water Resources Control Board (SWRCB)'s GeoTracker database that included a date of 1965. The ESA included a second offsite address for R & S Soil Products, 25193 Commercentre Drive; the ESA's conclusion that the former composting facility does not pose a recognized environmental condition to the project site applies to both addresses.

[4] A recognized environmental condition (REC) is an existing or past release, or a material threat of a release, of hazardous substances or petroleum products into the ground, groundwater, or surface water, even under conditions in compliance with laws.

HAZ MM-1 (*OSA PEIR MMRP Mitigation Measure 3.7-1*). Prior to the issuance of grading permits, the site developer(s) shall perform a tiered review under CEQA for the site to be graded to assess the potential for significant impacts related to hazardous materials be responsible for performing all hazardous material studies in connection with site development of parcels 1, 4, 5, and 7, and submit a report to the City that shall be reviewed and approved by the Director of Public Works/City Engineer. The report shall include the following:

- Investigate the project site to determine whether it or immediately adjacent areas have a record of hazardous material contamination via the preparation of a preliminary environmental site assessment (ESA), which shall be submitted to the City for review. If contamination is found the report shall, characterize the site according to the nature and extent of soil contamination that is present before development activities proceed at that site.

- If contamination is determined to be on site, the project developer(s), in accordance with appropriate regulatory agencies, shall determine the need for further investigation and/or remediation of the soils conditions on the contaminated site. If further investigation or remediation is required, it shall be the responsibility of the site developer(s) to complete such investigation and/or remediation prior to construction of the project.

- If remediation is required, it shall be accomplished in a manner that reduces risk to below applicable standards and shall be completed prior to issuance of any occupancy permits.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles or a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The project site is not in an airport land use plan, and the nearest public use airport to the site is John Wayne Airport ten miles west of the site. No impact would occur.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. There are no private airstrips or heliports within one mile of the project site (Airnav.com 2011). Project development would not cause any hazards related to aircraft operating to or from a heliport or private airstrip, and no impact would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The project would add 2,379 residential units and 25,000 square feet of commercial uses to the City of Lake Forest. The project provides 436 fewer residential units and 295,000 fewer square feet of commercial uses than analyzed in the OSA PEIR. Impacts on the City of Lake Forest's Emergency Preparedness Plan are identified in the OSA PEIR as less than significant after implementation of Mitigation Measure 3.7-4, which requires modification of the Emergency Preparedness Plan and available emergency response resources, as required, to accommodate development. In addition Mitigation Measure 3.7-3 and 3.7-5 address lane closures related to construction activities and fire hazards and are also incorporated into the proposed project. No new significant impact would occur.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR:

HAZ MM-2 (*OSA PEIR MMRP Mitigation Measure 3.7-3*). Lane Closures - At least three business days prior to any lane closure, the construction contractor shall notify the OCSD and OCFA, of construction activities that would impede movement (such as road or lane closures) along roadways immediately adjacent to the Project Area, and obtain an encroachment permit from the Public Works Department, to allow for uninterrupted emergency access and maintenance of evacuation routes.

HAZ MM-3 (*OSA PEIR MMRP Mitigation Measure 3.7-4*).Prior to issuance of building permits for any development within the Project Area, the City shall modify, to the extent necessary, the City's emergency response protocol and available emergency response resources, as outlined in the Emergency Preparedness Plan, to accommodate development. Such modifications shall ensure that the existing level of emergency service is maintained.

HAZ MM-4 (*OSA PEIR MMRP Mitigation Measure 3.7-5*). The City will reduce the potential for dangerous fires by implementing fire hazard education, fire protection, and fuel modification programs in coordination with the Orange County Fire Authority (OCFA). In addition, all development located within portions of the Project Area that are designated as a VHFSHZ/SFPA by OCFA shall comply with OCFA VHFSHZ/SFPA guidelines. Site developer(s) shall be responsible for providing evidence to the City and the OCFA prior to the issuance of grading permits that water pressure is adequate for fire-fighting purposes.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No New Impact. The project site is no longer mapped in very high fire hazard severity zones (VHFHSZs) in the draft Cal Fire maps. The project site is also next to part of the former MCAS El Toro west of the site that is managed as a nature preserve and is mapped as a VHFHSZ (Cal Fire 2010).

Wildfire hazard impacts were assessed in the OSA PEIR as less than significant after implementation of Mitigation Measures 3.7-5, 3.12-1, and 3.12-2; all these three mitigation measures are incorporated into the proposed project. Mitigation measures 3.12-1 and 3.12-2 are included in Section 3.14, *Public Services*, of this Initial Study. These three mitigation measures include requirements that projects comply with the Orange County Fire Authority (OCFA)'s Very High Fire Severity Hazard Zone/Special Fire Protection Area (VHFSHZ/SFPA) Guidelines; and that projects enter into a Secured Fire Protection Agreement with the OCFA prior to approval of any Master, Project, or Tentative Tract Map. In compliance with mitigation measure 3.12-1, a Fuel Modification Plan for Shea/Baker Ranch was approved by the OCFA in October 2010. The plan was designed to provide maximum safety for the community, particularly the northern edge of the community that has open space interface. The land north of Shea/Baker Ranch is part of a large open space preserve of native habitat. This land will remain in its natural condition in perpetuity. Because the native vegetation in southern California is dormant in the summer months, the threat of wildland fires increases during the hot months of the year.

Generally, fire safety is achieved through separation from natural open space. However, other techniques may be used to achieve the same result, based on a technical analysis of fire behavior in a given condition. A Fire Behavior Analysis Report was prepared for Shea/Baker Ranch. This report identified alternate means

and methods to achieve fire safety. These measures include such things as managing the types, size and moisture content of plants adjacent to development within Fuel Modification Zones, prohibiting structural vents on the building sides facing open space, controlling the size of vents in the community, and adding fire sprinklers to all homes in the community.

Shea/Baker Ranch employs two fuel modification zones. Zone A ranges in width from 10' to 26' and may be located within the private property of individual homeowners or within commonly maintained landscaped areas. Zone B ranges in width from 74' to 130' and is located and within commonly maintained landscaped areas and maintained by a homeowners association. Within both of these zones, the type of plant material and its ultimate size is limited to species approved by OCFA.

No change in existing conditions has occurred such that a substantial new impact would occur with development of the proposed project compared to development of OSA PEIR Site 1. There are no new impacts and impacts would remain less than significant.

3.9 WATER RESOURCES

The information and analysis in this Section is based in part on the following reports:

- *Water Quality Management Plan (WQMP) for: "Baker Ranch", Tentative Tract 16466*, Hunsaker and Associates Irvine, Inc., Revised July 2010.
- *Preliminary Hydrology Analysis for Tentative Tract 16466, Shea Properties/Baker Ranch, City of Lake Forest*, Hunsaker and Associates Irvine, Inc., March 2011.

Copies of these studies are included in the Technical Appendices to this Initial Study (Appendix F).

SURFACE WATER AND FLOODING

The project site includes a portion of the Borrego Canyon Wash that is unimproved through the project area and is highly impacted by run-off from upstream development. The wash lies within the San Diego Creek watershed, which is in the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB). The wash serves as a wildlife movement corridor, flowing along the southeast boundary of the former El Toro MCAS and ultimately discharging to San Diego Creek. The Shea/Baker Ranch project includes the widening of Alton Parkway to its ultimate right of way width, and drainage improvements to Borrego Channel Wash to repair existing erosion to the Wash and reduce future erosion. The improvements to the Borrego Wash were evaluated as part of the County of Orange Alton Parkway Extension EIR, which was certified in July 2009. However, the construction of the Borrego improvements is tied to the construction phasing of the Shea/Baker Ranch project. Construction of the Borrego Canyon Wash improvements would me concurrent with the project grading phase adjacent to the Wash. Additional information is available in Section 3.4, Biological Resources.

Findings of the OSA PEIR

Impacts related to surface water runoff, groundwater, and water quality were assessed qualitatively. Potential surface runoff impacts were calculated as a function of the approximate runoff coefficient. The runoff coefficient is an estimate of the percentage of water that falls on an area of land (such as rainwater or irrigation water) that runs off. The overall volume of runoff from Site 1 was expected to be greater compared to existing conditions, but peak flow runoff was expected to remain the same through implementation of detention basins and other BMPs to avoid substantial increases in peak flow runoff. Development of Site 1

pursuant to the PEIR would increase the runoff coefficient of the project site by 8.9 percent compared to existing conditions, but would decrease the runoff coefficient by 31 percent compared to General Plan buildout of the site. Runoff impacts were found to be less than significant after implementation of mitigation. Impacts to drainage and to watercourses were found to be less than significant after implementation of mitigation and compliance with regulatory requirements.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to water resources:

PPP WR-1 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Hydrology/Water Quality*) Compliance with NPDES, DAMP, Groundwater Management Plan.

PPP WR-2 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Hydrology/Water Quality*) Compliance with Lake Forest Municipal Code and County of Orange Codes regulating drainage and water quality.

PPP WR-3 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Hydrology/Water Quality*) Compliance, where necessary with FEMA regulations for Special Flood Hazard Areas.

PPP WR-4 (*OSA PEIR MMRP Drainage/Flood/NPDES Standard Conditions of Approval DFN1*) Prior to the issuance of a grading permit, a complete hydrology and hydraulic study (include off-site areas affecting the development) shall be prepared by a qualified engineer and shall be submitted by the applicant to the Director of Public Works/City Engineer for review and approval. The report shall include detailed drainage studies indicating how the grading, in conjunction with the drainage conveyance systems including applicable swales, channels, street flows, catch basins, storm drains, and flood water retarding, will allow building pads to be safe from inundation from rainfall runoff which may be expected from all storms up to and including the theoretical 100-year flood.

PPP WR-5 (*OSA PEIR MMRP Drainage/Flood/NPDES Standard Conditions of Approval DFN2*) Prior to the issuance of a grading permit, the applicant shall demonstrate to the Building Official that coverage has been obtained under California's General Permit for Storm Water Discharge Associated with Industrial Activity by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) Number to the Building Official. Prior to the issuance of a grading permit, the applicant shall submit to the Building Official for review and approval a Stormwater Pollution Prevention Plan (SWPPP). A copy of the approved SWPPP shall be kept at the project site and available for review upon request.

PPP WR-6 (*OSA PEIR MMRP Drainage/Flood/NPDES Standard Conditions of Approval DFN3*) Prior to the issuance of a grading permit, the applicant shall prepare a Water Quality Management Plan (WQMP) specifically identifying the Best Management Practices (BMP's) that will be used on site to control predictable pollutant runoff. The plan shall identify the types of structural and non-structural measures to be used. The plan shall comply with the Orange County Drainage Area Management Plan (DAMP). Particular attention should be addressed to the appendix section "Best Management Practices for New Development." The WQMP shall clearly show the locations of structural BMP's, and assignment of long term maintenance responsibilities (which shall also be included in the Maintenance Agreement). The plan shall be prepared to the general form and content shown in the City of Lake Forest's WQMP Template and shall be submitted to

the Director of Public Works/City Engineer for review and approval. The DPW/CE shall approve the plan if the Director reasonably determines that the plan is substantially similar in all material respects to the City of Lake Forest's WQMP Template.

PPP WR-7 (*OSA PEIR MMRP Drainage/Flood/NPDES Standard Conditions of Approval DFN4*) Prior to the issuance of a certificate of occupancy, the applicant shall demonstrate that all structural Best Management Practices (BMP) described in the project's Water Quality Management Plan (WQMP) have been constructed and installed. In addition, the applicant is prepared to implement all non-structural BMP's described in the project's WQMP. Two (2) copies of the WQMP shall be available on-site. Prior to the issuance of a certificate of occupancy, all equipment shall be in place and in good working order as indicated in the WQMP.

PPP WR-8 (*OSA PEIR MMRP Drainage/Flood/NPDES Standard Conditions of Approval DFN5*) This project includes land within a Special Flood Hazard Area (SFHA), subject to inundation according to the Flood Insurance Rate Map (FIRM) that has not been addressed by an underlying subdivision map. Prior to the issuance of a precise grading permit, the applicant shall furnish to the City Engineer documentation required by the Federal Emergency Management Agency (FEMA) for revision to the FIRM and Flood Insurance Study (FIS), including additional data as required by FEMA. The applicant shall pay all preliminary and subsequent fees as required by FEMA.

Project Design Features

The following Project Design Features (PDFs) relate to potential water resources impacts:

PDF WR-1 (*OSA PEIR MMRP Project Design Features for Hydrology/Water Quality*) Subsequent related development projects will include specific project design features for hydrology and water quality developed with project level entitlements.

The Appendix G of the CEQA Guidelines and *The City of Lake Forest CEQA Significance Thresholds Guide* (March 2009) were utilized as guidance in determining potential impacts to water resources (hydrology and water quality). A project would normally have a significant impact if it would:

a) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

No New Impact. The hydrology study for the proposed project was completed in March 2011. The project site is divided into five drainage areas by the hydrology study. Drainage Area C currently spans the northern half of the site and drains to a detention basin. Drainage areas B, D, A, and E extend from west to east, respectively, across the southern half of the site and drains to a detention basin. These areas drain toward storm drains toward Bake Parkway to storm drains that discharge to Serrano Creek, which passes about 0.4 mile southeast of the site. Borrego Wash Channel and Serrano Creek are both tributaries of San Diego Creek, which discharges into Upper Newport Bay. Figure 17, *Existing Hydrology*. The relative positions of the five drainage areas remain the same in post-project conditions; however, Drainage Area C expands to cover about two-thirds of the site.

Pre-project Drainage

Currently about 10 percent of the project site is impervious. Most of the existing drainage facilities onsite are agricultural drainage ditches alongside roadways. Pre-project peak drainage flows from 25-year storms, and the acreage of each drainage area, are shown below in Table 3.9-1.

Table 3.9-1
Pre-Project Drainage

Drainage Area	Acres	Peak Flow, cubic feet per second (cfs), 25-year storm	Facility receiving runoff
A	65.4	132.0	Existing 48-inch reinforced concrete pipe (RCP) storm drain "F19P11"
B	121.3	210.5	Existing swale
C	189.0	308.4	Borrego Channel
D	0.9	2.2	Existing 24-inch RCP storm drain "L"
E	9.3	22.2	Existing 90-inch RCP storm drain "F19P06"

Source: Hunsaker 2010

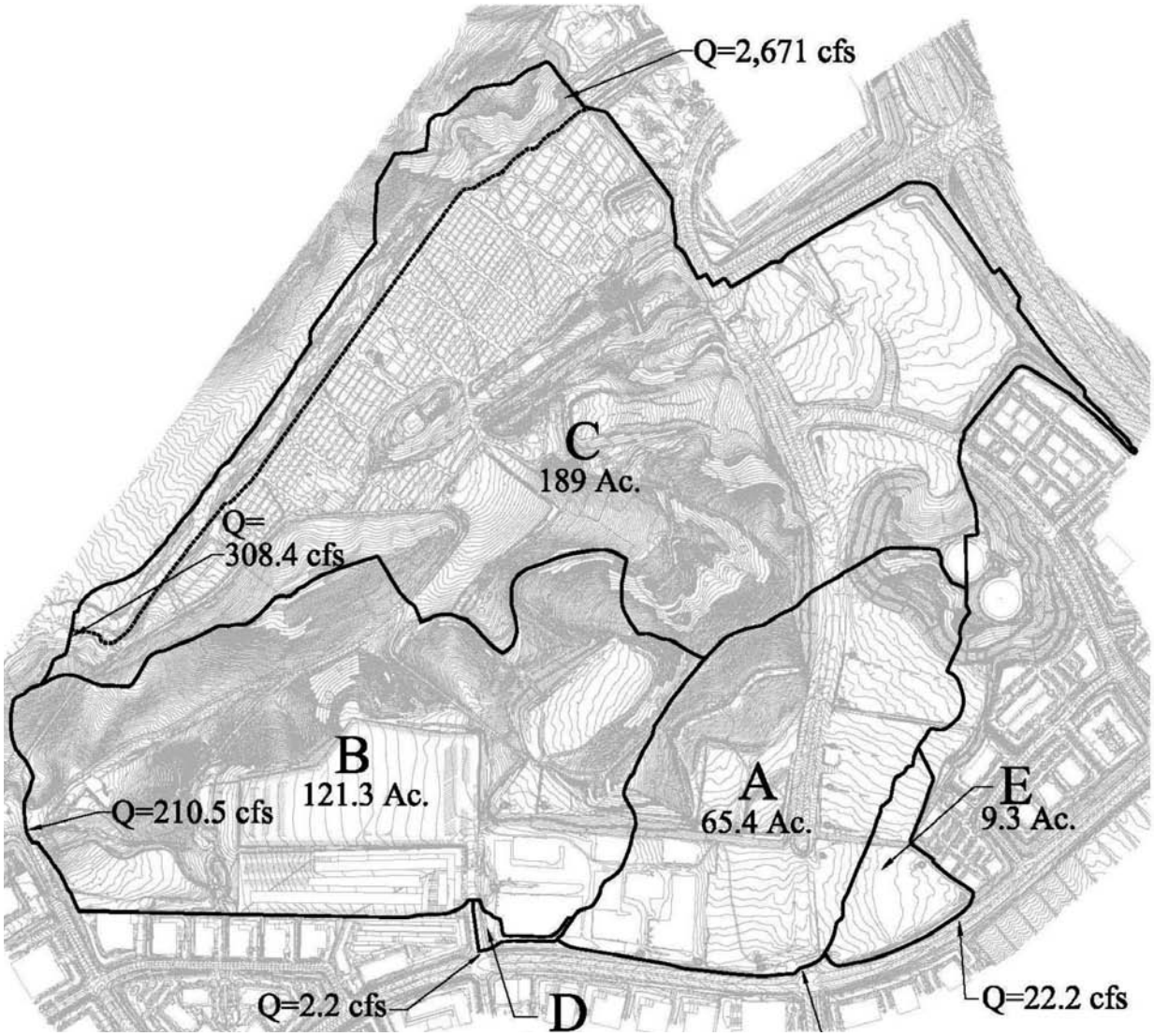
Drainage in post-project conditions:

The project would develop a network of storm drains within Drainage Areas A, B, D, and E. A water quality/detention basin ("basin") with 35.5 acre-feet capacity would be developed near the northwest corner of the project site, as shown in Figure 18, *Proposed Hydrology*. The proposed storm drain system in Drainage Area C would discharge to the basin. In post-project conditions the peak drainage flow from Area C would be 579.0 cubic feet per second (cfs), 270.6 cfs more than the existing peak flow. Peak drainage flow from the basin would be controlled so that it would not exceed the peak rate in existing conditions. The proposed storm drainage system includes a 48-inch reinforced concrete pipe (RCP) storm drain that the storm drain system in Area B would discharge into. The proposed 48-inch storm drain would discharge into the proposed basin. In post-project conditions 86 percent of the project site (that is, Areas B and C) would drain to the basin, and subsequently to Borrego Wash Channel; the balance of the site would drain to existing storm drains that discharge to Serrano Creek.

Drainage improvements to Borrego Wash include reinforcing the east bank of the Channel segment from Towne Center Drive on the northeast to Commercenter Drive on the southwest. The materials and design of the reinforcement would be in accordance with Orange County Flood Control District (OCFCD) standards and the grading would be in accordance with the City's Grading Ordinance and Grading Manual. In addition, a parallel bypass drainage system will be constructed to carry storm flows from the upstream areas in Borrego Wash around the segment of the channel within the project site. The bypass system will consist of a box culvert with an outlet and energy dissipation structure that will be built at the southern end of the site. The applicant is pursuing an agreement that will allow this parallel system to be dedicated to the OCFCD upon completion. These improvements to the Borrego Wash were evaluated as part of the County of Orange Alton Parkway Extension EIR, which was certified in July 2009.

Post-project drainage for the five drainage areas is compared to pre-project drainage below in Table 3.9-2.

Existing Hydrology



0 1,000
Scale (Feet)

Source: SBRA 2012

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Table 3.9-2
Post-Project Drainage

Drainage Area	Pre-Project Conditions		Post-Project Conditions			Facility receiving runoff
	Acres	Peak Flow, cfs	Acres	Peak Flow, cfs	Peak Flow, cfs, less pre-project flow	
A	65.4	132.0	49.2	130.3	-0.9	Existing 48-inch RCP storm drain "F19P11"
B	121.3	210.5	90.54	198.5	24.2	Proposed 48-inch RCP storm drain "E" with 258 cfs capacity, and which would discharge into the proposed water quality/detention basin.
C	189.0	308.4	227.2	555.9 308.4 (with basin)	270.6	Water quality/detention basin; 35.5 acre-feet capacity; would discharge to Borrego Channel with flow not exceeding current peak flow of 308.4 cfs.
D	0.9	2.2	0.6	2.1	-0.4	Existing 24-inch RCP storm drain "L"
E	9.3	22.2	6.0	15.4	-15.6	Existing 90-inch RCP storm drain "F19P06"

Source: Hunsaker 2010

The proposed storm drainage system onsite is designed to accommodate peak drainage flow rates from a 25-year storm. In four drainage areas, A, C, D, and E, discharges to offsite drainage facilities would be no greater than that in existing conditions. There would not be an increase in the peak flow rate in Area B of 24.2 cfs to a post-project rate of 198.5 cfs. However, the project would include installation of a new 48-inch RCP storm drain that the storm drain system in Area B would discharge into. The proposed storm drain would have capacity of 258 csf, and would thus accommodate post-project drainage from Area B. The proposed storm drain would discharge into the proposed basin.

As with the OSA PEIR Site 1 project, the Shea/Baker Ranch project would not cause flooding onsite or offsite, and impacts would be less than significant. Therefore, no new significant impact would occur compared to impacts identified in the OSA PEIR.

b) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.

No New Impact. Peak storm drainage flow rates from a 25-year storm, in pre-project and post-project conditions, are described above in Section 3.9.b. Existing and proposed storm drainage systems would have sufficient capacity for peak flow rates from the site in post-project conditions, and impacts would remain less than significant.

c) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No New Impact. Most of the western one-third of the project site, that is, most of the site of Phase 3B of the project, is in Flood Zone A designated by the Federal Emergency Management Agency (FEMA), that is, within a 100-year flood zone (FEMA 2009a, FEMA 2009b, FEMA 2010). As described in detail in Section

1.2.5, *Project Phasing*, of this Initial Study, Phase 3B of the project would include development of 652 residential units, most of which would be on land currently in a 100-year flood zone. After completion of the proposed reinforcement of the bank of Borrego Wash, the 100-year flood zone on the segment of Borrego Wash would be limited to the proposed Borrego Wash channel (RBF 2006). After completion of the proposed reinforcement of Borrego Channel, the project applicant would request a Letter of Map Revision (LOMR) from the Federal Emergency Management Agency (FEMA), which would reclassify the part of the project site outside of Borrego Channel that is currently classified in Flood Zone A to a flood zone designating areas outside of 100-year flood zones. No housing would be developed within a 100-year flood zone, and impacts would be less than significant. No new significant impacts regarding 100-year flood zones, compared to impacts identified in the OSA PEIR, would occur.

d) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No New Impact Part of the project site is within a 100-year flood zone. Proposed improvements to Borrego Wash Channel and consequent changes to 100-year flood zones are described above in Section 5.9.c. There will be no structures or buildings in the 100-year floor zone. Impacts would remain less than significant and no new impacts would occur compared to the OSA PEIR.

e) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The project site is in the watersheds of Borrego Wash and Serrano Creek. There are no dams upstream of the project site on either of those streams, and project development would not result in flood hazards related to dam failure. The project site is not in an area mapped by FEMA as protected from 100-year floods by levees. No impact would occur, and no new impact would occur that is not identified in the OSA PEIR.

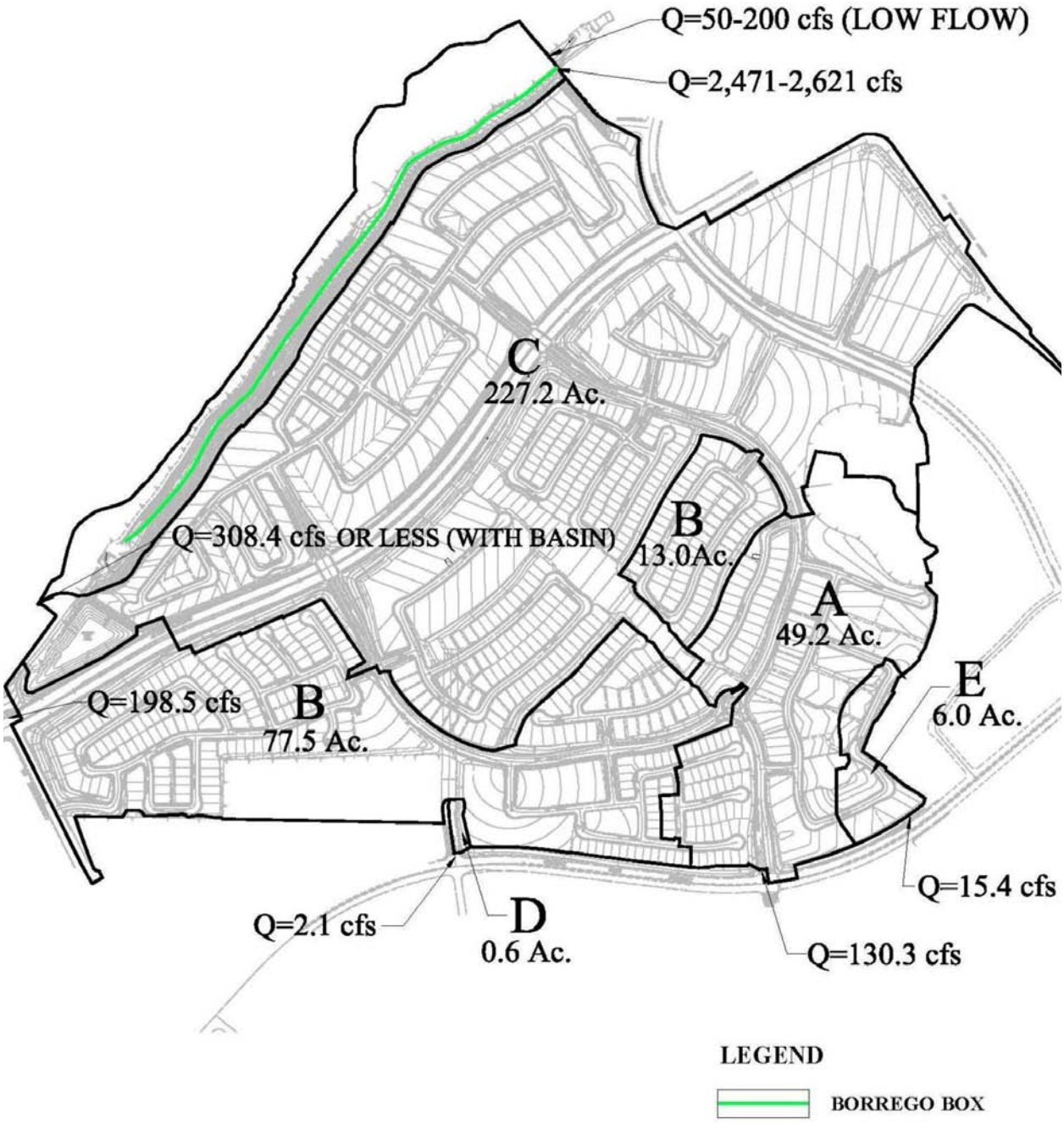
f) Cause inundation by seiche, tsunami, or mudflow?

No Impact. (Seiche, Tsunami, and Mudflow). A seiche is a surface wave created when an inland body of water is shaken, usually by earthquake activity. There are two aboveground water tanks on top of a small hill next to the east site boundary; each tank is about 200 feet in diameter. Waves inside the tanks, for instance resulting from earthquakes, would be contained by the tanks and are not expected to result in substantial flood hazards due to a seiche. There is a third aboveground tank offsite approximately 400 feet west of the west end of the site. The tank is on a northeast-facing hillside. Waves inside the tank would be contained by the tank because typical tank design includes flexible joints that can accommodate movement in any direction. The water tanks would not pose a flood hazard due to a seiche.

A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. Elevation onsite ranges from about 570 feet to 860 feet above mean sea level (amsl), and the site is 11.5 miles inland from the Pacific Ocean; thus, the site is not at risk of flooding due to a tsunami.

A mudflow is a landslide composed of saturated rock debris and soil with a consistency of wet cement. There is an existing natural slope in the northeast corner of the project site on which debris flows, that is, mudflows, could occur. The project would remove the slope through cut and fill grading, and develop that part of the site with a combination of mixed-use and residential development. At project completion the site would be developed with buildings, roadways, other paved areas such as driveways and parking lots, and landscaped areas. At project completion there would be no mudflow hazard either to the project site or from the project site to surrounding areas.

Proposed Hydrology



Source: SBRA 2012

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No inundation from mudflow, seiche, or tsunami impacts would occur as a result of the proposed project compared to the Site 1 project analyzed in the OSA PEIR.

g) Deposit sediment and debris materials within existing channels obstructing flows

No New Impact. The project would involve approximately 5 million cubic yards (CY) of cut grading and 5 million CY of fill grading. Considering the amount of grading required, erosion and sedimentation could occur during project grading and construction activities. The project would prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) specifying BMPs to be used to minimize pollution of stormwater from project construction, including pollution with sediment and debris. Such BMPs are described further below in Section 3.9.m. Implementation of BMPs would reduce the amount of sediment carried from the project site to channels; the project would not cause obstructions to flows in existing channels. Impacts would be less than significant, and no new significant impacts would occur.

h) Exceed the capacity of a channel and cause overflow during design storm conditions.

No New Impact. Impacts to storm drainage flows and storm drainage capacity are discussed above in Section 3.9.a. The project includes a proposed storm drainage system with sufficient capacity for estimated storm drainage from the site in post-project conditions, and impacts would remain less than significant. No new significant impacts compared to impacts identified in the OSA PEIR, would occur.

GROUNDWATER

i) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

No New Impact.

Groundwater Use

The project would not involve groundwater wells. The Irvine Ranch Water District (IRWD) would provide water to the project; IRWD supplies water to most of the City of Lake Forest and all of the City of Irvine. Currently, approximately 50 percent of IRWD's potable water supply comes from imported water purchased from the Metropolitan Water District of Southern California (MWD). The balance of IRWD's potable supplies come from locally-developed groundwater, from the Orange County Main Groundwater Basin (OCMGWB) including the Irvine Sub-basin of the OCMGWB. IRWD obtains nonpotable water from four sources: recycled water from IRWD wastewater treatment plants; untreated MWD water; surface water; and non-potable groundwater.

A water supply assessment (WSA) was prepared for the OSA PEIR by the IRWD in 2005. Water supply impacts were found to be less than significant in the OSA PEIR. The maximum permitted development intensity for the site is reduced considerably in the proposed project compared to that approved for the site in the PEIR; thus, project water demands would be reduced compared to demands that would result from development approved in the PEIR. No new significant impact to groundwater supplies is expected to occur. Therefore, impacts to water supply and groundwater use would not be greater than those identified in the certified OSA PEIR.

Groundwater Recharge

The project is underlain by bedrock, mostly sandstone and silty sandstone. There is local perched groundwater in alluvium and weathered bedrock above the bedrock. Groundwater was found in borings onsite at depths of five to 10 feet below ground surface (bgs) under the flood plain of the Borrego Wash, which occurs on the site west of the Alton Parkway extension. At project completion, 35 percent of the project site would consist of pervious surfaces where stormwater could percolate into soil. Drainage from 86 percent of the project site would be directed to a detention basin at the west end of the site, which is being developed as part of the Alton Parkway road extension project would also provide for some groundwater recharge. Impacts to groundwater were identified as less than significant in the OSA PEIR. The project site is not above a groundwater basin. However, as discussed in the OSA PEIR, the IRWD, Orange County Water District and member agencies aggressively manage groundwater resources to minimize impacts. These agencies use recycled water, imported water for groundwater storage, spreading grounds for groundwater recharge, injection wells, and conduct monitoring and research programs to further manage groundwater resources. Additionally, existing NPDES stormwater regulations (e.g., construction activities, post construction BMPs, and others) would prevent direct contamination and degradation of groundwater resources. City development codes are consistent with existing groundwater management plans. As with the Site 1 project, the Shea/Baker Ranch project does not propose new wells and no significant impact on groundwater recharge or recharge potential would occur. No substantial new impact to groundwater recharge is anticipated.

j) Adversely change the rate, direction, or flow of groundwater

No New Impact. The elevation of groundwater under the site is estimated to be five to ten feet below the level of the bed of Borrego Canyon Wash. The Borrego Canyon Wash bed is about 660 feet amsl at the northwest corner of the site, and 565 feet amsl at the southwest corner of the site. At completion of grading, groundwater is expected to be present at the bottom of canyon removals.

The groundwater that is anticipated to exist once the site is graded should be mostly concentrated in the bottom of canyon removals where saturated alluvium/colluvium is planned to be left in place, and below the Borrego Wash and Plain, which is fed by daily flow from upstream developments. Also, transient groundwater is expected in the future to migrate along the fill-bedrock contact. Subdrains are planned for the canyon bottoms and the stabilization keys and backcuts to help control groundwater flow. Recommendations for subdrains are included in the project geotechnical investigation report; compliance with the recommendations is required. No new significant impact would occur compared to impacts identified in the OSA PEIR.

k) Have an impact on groundwater that is inconsistent with a groundwater management plan prepared by the water agencies with the responsibility for groundwater management.

No New Impact. Groundwater under the project site and surrounding areas is not subject to a groundwater management plan. The project site is not above a groundwater basin mapped by either the California Department of Water Resources or the Metropolitan Water District of Southern California (DWR 2003; MWD 2007). The nearest groundwater basins to the project site are the Irvine Subbasin of the Orange County Groundwater Basin, west of the site, and the San Juan Groundwater Basin southeast of the site. The project site is within IRWD's district boundaries; however, IRWD does not have authority for groundwater management. The project would not be inconsistent with a groundwater management plan because it is not subject to one. No new impact compared to the OSA PEIR would occur.

WATER QUALITY

Findings of the OSA PEIR

San Diego Creek is listed on the Clean Water Act Section 303(d) List of Water-Quality Limited Segments as impaired by nutrients (nitrogen and phosphorous), sediment, and toxics (pesticides and metals in water and sediment). The OSA projects would discharge to Serrano Creek and Borrego Wash, tributaries to San Diego Creek. Water quality impacts related to sediment, metals, and nutrients were found to be less than significant. Total Maximum Daily Loads (TMDLs, that is, maximum concentrations of pollutants that are allowed to occur in surface waters) have been established for San Diego Creek for nitrogen, phosphorous, sediment, and for two pesticides, chlorpyrifos and diazinon (both of which are organophosphate insecticides). The TMDL for chlorpyrifos in San Diego Creek prohibits acute concentrations above 18 ng/L[5], and chronic concentrations above 12.6 ng/L. The TMDL for diazinon prohibits acute concentrations above 72 ng/L and chronic concentrations above 45 ng/L. Water quality impacts related to pesticides were found to be significant and unavoidable.

l) Violate any water quality standards or waste discharge requirements?

No New Impact.

Construction Phase

Discharges into stormwater by the project during the construction phase would be regulated by the General Construction Permit, SWRCB Order No. 2009-0009-DWQ. The General Construction Permit requires the project to prepare and implement a SWPPP specifying BMPs that the project would use to minimize contamination of stormwater. BMPs that would be specified in the SWPPP and incorporated into the construction phase of the project are described further below in Section 3.9.m. Impacts would remain less than significant. No new impact compared to the OSA PEIR would occur.

Operations Phase

The project would develop the site with residential, commercial, and open space uses, and roadways. Project operation could introduce substantial amounts of water pollutants into the Borrego Canyon Wash and Serrano Creek watersheds. A Water Quality Management Plan (WQMP) has been prepared and approved for the project pursuant to San Diego Regional Water Quality Control Board (SDRWQCB) Order No. R9-2009-0002 issued in 2009, regulating urban storm water runoff in the part of Orange County in the jurisdiction of the SDRWQCB (Hunsaker 2010).

m) Cause a significant alteration of receiving water quality during or following construction?

No New Impact.

Beneficial Uses of Waters

Beneficial uses are the ways that water can be used for the benefit of people and/or wildlife. Rivers and streams are divided into segments, or "reaches," for the purposes of designating beneficial uses and listing pollutants impacting those water bodies. The beneficial uses of San Diego Creek Reach 2, upstream from Jeffrey Road, are groundwater recharge, recreation, warm water habitat, and wildlife habitat. Recreational

[5] ng/L is nanograms per liter; one nanogram is one billionth part of one gram. Acute concentrations of a pollutant rapidly induce an effect; in aquatic toxicity tests, an effect observed within 96 hours is considered an acute effect (USEPA 2011).

uses include body-contact uses such as swimming and wading, and non-body-contact uses such as sightseeing and picnicking.

Existing Surface Water Quality Impairments

San Diego Creek Reach 2, that is, above Jeffrey Road, is listed on the 2007 Section 303(d) list for metals. San Diego Creek Reach 1, below Jeffrey Road, is listed for fecal coliform bacteria from urban runoff; selenium (source unknown); and toxaphene, an insecticide (source unknown). San Diego Creek discharges into Upper Newport Bay, which is listed for chlordane (source unknown), copper (source unknown), DDT (source unknown), metals from urban runoff, PCBs (source unknown), and sediment toxicity (source unknown). Chlordane and DDT are organochlorine insecticides. PCBs are polychlorinated biphenyls, a class of organic compounds that was formerly used as coolants in electrical equipment. Chlordane, toxaphene, DDT, and PCBs have all been banned due to toxicity to humans and/or animals.

Construction Impacts

The project would involve approximately 5 million CY of cut grading and 5 million CY of fill grading. Thus, the project could result in substantial erosion and sedimentation during site grading and project construction if effective erosion-control measures were not used. The project would prepare and implement a SWPPP specifying BMPs for minimizing water pollution from project construction, including pollution with sediment. Other water pollutants that could result from project construction include oil and grease, metals, trash and debris, nutrients (such as from fertilizers), and organic compounds (such as solvents).

Categories of BMPs included in SWPPPs are described in Table 3.9-3 below.

Table 3.9-3
Construction BMPs

Category	Purpose	Examples
Erosion Controls	Cover and/or bind soil surface, to prevent soil particles from being detached and transported by water or wind	Mulch, geotextiles, mats, hydroseeding, earth dikes, swales
Sediment Controls	Filter out soil particles that have been detached and transported in water.	Barriers such as straw bales, sandbags, fiber rolls, and gravel bag berms; desilting basin; cleaning measures such as street sweeping
Wind Erosion Controls	The aims and methods of wind erosion control are similar to those of erosion control described above.	See Erosion Controls above.
Tracking Controls	Minimize the tracking of soil offsite by vehicles	Stabilized construction roadways and construction entrances/exits; entrance/outlet tire wash.
NonStorm Water Management Controls	Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Conduct various construction operations, including paving, grinding, and concrete curing and finishing, in ways that minimize non-stormwater discharges and contamination of any such discharges.	BMPs specifying methods for: paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; concrete curing; concrete finishing.
Waste Management and Controls (i.e., good housekeeping practices)	Management of materials and wastes to avoid contamination of stormwater.	Spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes.

Implementation of construction BMPs identified in the project SWPPP would reduce construction impacts to water pollution to less than significant.

Operational Impacts

Potential Pollutants

- *Bacteria and Viruses (Pathogens).* Bacteria and viruses are microorganisms that thrive under certain environmental conditions. Water contamination by animal or human fecal wastes and contamination by excess organic wastes are common causes of proliferation of these microorganisms. Water containing excessive bacteria and viruses can alter the aquatic habitat and harm humans and aquatic life.

- *Metals*. Metals of concern as water contaminants include cadmium, chromium, copper, lead, mercury, and zinc. Lead and chromium have been used as corrosion inhibitors; metals are also raw materials used in nonmetal products such as fuels, adhesives, and paints. At low concentrations naturally occurring in soil, metals may not be toxic. However, certain metals at higher concentrations can be harmful to aquatic life and to humans. Humans can be impacted from groundwater contaminated with metals. Metals can become concentrated in fish and shellfish, and can subsequently harm humans who consume those animals. Environmental concerns have already led to restrictions on some uses of metals.

- *Nutrients.* Nutrients are inorganic substances such as nitrogen and phosphorous; the primary sources of these substances in urban runoff are fertilizers and eroded soils. Excessive discharge of nutrients to water bodies and streams causes overgrowth of aquatic plants and algae, which can lead to excessive decay of organic matter in the water, loss of oxygen in the water, and eventual death of aquatic organisms.

- *Pesticides.* Relatively low concentrations of the active ingredients in pesticides can be toxic in water. Excessive or improper use of pesticides can cause toxic contamination in runoff.

- *Organic Compounds.* Organic compounds are carbon based. Commercially available or naturally occurring organic compounds are found in pesticides, solvents, and hydrocarbons. Organic compounds at certain concentrations can be hazardous to life or health. Toxic levels of solvents and cleaning compounds can be discharged to storm drains during cleaning and rinsing operations.

- *Sediments*. Sediments are solid materials that are eroded from the land surface. Sediments can increase the turbidity (cloudiness) of water, clog fish gills, reduce spawning habitat, lower survival rates of young aquatic organisms, smother bottom-dwelling organisms, and suppress aquatic vegetation growth.

- *Trash and Debris.* Trash and debris, such as paper, plastic, polystyrene foam, aluminum, and biodegradable organic matter such as leaves, grass cuttings, and food waste, may significantly impair aquatic habitat and the recreational value of a water body. In addition, trash impacts water quality by increasing biochemical oxygen demand.

- *Oxygen-Demanding Substances.* Microbial biodegradation of organic compounds such as proteins, carbohydrates, and fats causes increased oxygen demand in water. A second category of oxygen-demanding substances is chemicals, such as ammonia and hydrogen sulfide, which react with dissolved oxygen in water to form other compounds. The oxygen demand of a substance can deplete dissolved oxygen in a water body and thus can lead to septic conditions. A reduction of dissolved oxygen is harmful to aquatic life and can generate hazardous compounds such as hydrogen sulfides.

- *Oil and Grease.* Oil and grease in water bodies decrease their aesthetic value as well as water quality; one of the most important sources of oil and grease is leakage from motor vehicles.

Pollutants of Concern

Pollutants of concern are those that have been identified as causing impairment of receiving waters, that is, San Diego Creek and Upper Newport Bay. Pollutants of concern for the site are fecal coliform bacteria, selenium, toxaphene, chlordane, copper, DDT, metals, PCBs, and sediment toxicity.

Best Management Practices

The project would implement the approved WQMP specifying BMPs to be implemented during project design and project operation to avoid or reduce stormwater pollution from project operation. Site design for stormwater quality protection uses a three-level strategy:

1. Reduce or eliminate post-project runoff;

2. Control sources of pollutants; and, if still needed after (1) and (2),

3. Treat contaminated stormwater before discharging it into the storm drain system or into receiving waters.

There are three categories of BMPs, with each category corresponding to one of the three strategies: site design BMPs, source control BMPs, and treatment control BMPs. Source control BMPs are classified further into structural source control BMPs incorporated into the project design, and nonstructural source control BMPs used in project operation. The approved WQMP and the proposed BMPs for have been developed to minimize drainage impacts identified in Section 5 of the WQMP and the introduction of pollutants identified in Section 4 of the WQMP into the municipal storm drain system and/or ultimate drainage receiving water body.

Section 6 of the WQMP provides detail on specific site design and structural source control BMPs, nonstructural source control BMPs, and treatment control BMPs incorporated in the proposed project's design. The project will implement the BMPs identified in the approved WQMP and water quality impacts would remain less than significant relative to OSA PEIR Site 1. No new significant water quality impacts would occur beyond those impacts identified in the OSA PEIR

n) Substantially degrade groundwater quality

No New Impact. Canyon bottom removals to be conducted as part of site grading may reach groundwater. Implementation of the BMPs identified above in Section 3.9.m, in combination with the subdrains required per the geotechnical investigation report, would reduce water quality impacts to groundwater to less than significant. No new significant impacts would occur compared to impacts identified in the OSA PEIR.

o) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site.

No New Impact. The project would substantially change the existing drainage pattern of the site from the existing condition, as described above in Section 3.9.a. However, the OSA PEIR contemplated channel stabilization measures for the Borrego Wash to control erosion and sedimentation. The OSA PEIR found that improvement to the Borrego Wash would improve conditions and impacts were found to be less than significant. The bypass channel is expected to provide long-term stable banks for Borrego Canyon Wash, decreasing erosion and sedimentation by diverting high flows downstream to a wider, less incised area of the Borrego Canyon Wash, in a location where less bank erosion has historically occurred.

During the construction phase of the project, the OSA PEIR determined that a Storm Water Management Pollution Prevention Plan (SWPPP) would reduce erosion or siltation resulting from project construction to less than significant. Compliance with existing regulations such as the City of Lake Forest Grading and Excavation Code and Storm Water Management Code, SWPPP and DAMP would reduce potential construction related siltation and erosion impacts to water quality of a less than significant impact. Therefore, there are no new impacts compared to Site 1 of the OSA PEIR.

At project completion, the great majority of the site would be developed with buildings; paved areas including roadways, driveways, parking lots, and walkways; and landscaped areas. The remainder of the site would be open space planted with types of vegetation native to the region. Therefore, during project operation there would be no areas of bare soil left on the site that would be susceptible to substantial erosion. Impacts would be less than significant, and no new significant impacts would occur relative to impacts identified in the OSA PEIR.

p) Create or contribute runoff water which would generate provide substantial additional sources of polluted runoff?

No New Impact. Project water quality impacts are addressed above in Section 3.9.m. Impacts would be less than significant, and no new significant impacts compared to the OSA PEIR would occur.

q) Substantially degrade water quality by discharge which affects the beneficial uses (i.e. swimming, fishing, etc.) of the receiving or downstream waters?

No New Impact. Beneficial uses are the ways that water can be used for the benefit of people and/or wildlife. The beneficial uses of San Diego Creek Reach 2, upstream from Jeffrey Road, are groundwater recharge, recreation, warm water habitat, and wildlife habitat. Recreational uses include body-contact uses such as swimming and wading, and non-body-contact uses such as sightseeing and picnicking.

Implementation of BMPs described in Section 3.9.m above would reduce amounts of water pollutants from the project that would reach receiving waters. At project completion drainage from 86 percent of the project site would be discharged into the water quality/detention basin before being discharged from the basin to Borrego Creek. Drainage from the balance of the site would pass through filter chambers before discharge to existing storm drains. The project would not have significant impacts on beneficial uses of receiving waters. Impacts would be less than significant, and no additional significant impacts would occur compared to those identified in the OSA PEIR.

r) Increase in any pollutant for which the receiving water body is already impaired as listed on the Clean Water Act Section 303(d) list.

No New Impact. Lists of water bodies not meeting water quality standards set for them are developed by states pursuant to Section 303(d) of the federal Clean Water Act. Neither Serrano Creek nor Borrego Canyon Wash are listed on the 2007 303(d) list as impaired water bodies. However, both Serrano Creek and Borrego Canyon Wash are tributary to San Diego Creek, which in turn discharges into Upper Newport Bay. Section 303(d) listings of water quality impairments for San Diego Creek and Upper Newport Bay are listed above in Section 3.9.m. The project would implement BMPs described above in Section 3.9.m, and would not increase concentrations of pollutants for which San Diego Creek and Upper Newport Bay are included on the 303(d) list. Impacts would be less than significant, and no new significant impacts would occur beyond those identified in the OSA PEIR

3.10 LAND USE AND PLANNING

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed Project and will help to reduce and avoid potential impacts related to land use:

PPP LU-1 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Planning*) Compliance with Lake Forest Municipal Code, including Zoning, Planned Community Text(s) as appropriate, Lake Forest General Plan policies, and the Uniform Building Code.

a) Physically divide an established community?

No Impact. There are no residential uses next to the project site. There are two existing residences onsite; however, two residences on a 386.7-acre site are not considered to be a community. Rather, the scale and size of the project would likely result in it functioning as a new community with connections to the existing City established through roadways and the availability of new publicly-accessible amenities. The proposed project would not divide an established community. The proposed project would have no changes in the environment as compared to the original project analyzed in the EIR.

b) Substantially conflict with existing on-site or adjacent land use due to project-related significant unavoidable indirect effects (e.g., noise, aesthetics, etc) that preclude use of the land as it was intended by the General Plan.

No Impact. Use of the site for residential, mixed-use and commercial land uses was approved by the City of Lake Forest in 2010. The existing General Plan land use designations for the project site are of Mixed-Use (MU), Low Density Residential (LDR), Medium Density Residential (MDR), Low-Medium Density Residential (L-MDR), Business Park (BP) and Open Space (OS). Proposed land uses are consistent with the site's existing General Plan land use designations. The project is generally surrounded by light industrial and business park (BP) land use designations to the east and south; light industrial, mixed-use, and commercial designations to the north. Land west of the site in the City of Irvine is designated Habitat Preserve in the City of Irvine General Plan (City of Irvine 2006). The open space to the northwest is currently owned by the federal government. Most of this area remains natural open space. The Federal Aviation Administration (FAA) maintains navigational aids within a small portion of the area and has agreements with the Federal Bureau of Investigation (FBI) and the U.S. Fish and Wildlife Service regarding use of the remainder of the property. The FBI uses remaining infrastructure (e.g. roads and bunkers) in the open space for agent training. The former MCAS El Toro is located west of the project site. Residential, commercial, and open space uses that would be developed by the proposed project would not substantially conflict with any General Plan land use designations on or next to the site.

The OSA PEIR determined that development of Sites 1 through 6 would not result incompatible land uses or create a nuisance for adjacent properties. The proposed project would have no changes in the environment as compared to the analysis for the Site 1 project in the OSA PEIR.

c) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, planned community, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

No Impact. The proposed project would not conflict with City of Lake Forest General Plan land use designations for the project site. The project site is zoned Baker Ranch Planned Community and use of the site for the types of land uses in the proposed project has been previously approved by the City of Lake Forest. The land use plan for Shea/Baker Ranch divides the site into planning areas, based upon the unique features and development concepts proposed for the different parts of the community. Planning area boundaries are located at the centerline of streets or property lines between neighborhoods. Since approval of the zone change approving Shea/Baker Ranch, project roadway alignments have been adjusted and lot layouts have been prepared. This results in minor shifts in the planning area boundaries, while retaining the original development concept and intent. Proposed land uses are consistent with the site's existing land use designations. No impact would occur compared to the analysis for the Site 1 project in the OSA PEIR.

d) Conflict with the Central and Coastal Natural Communities Conservation Program/Habitat Conservation Plan (NCCP/HCP) of which the City of Lake Forest is a participant.

No New Impact. The project site is in the plan area of the Orange County Central-Coastal Natural Communities Conservation Plan (NCCP); however, the site is not in the NCCP Reserve System. Compliance with provisions of the NCCP is required by mitigation measure 3.4-2 of the OSA PEIR, which is incorporated into the proposed project. See Section 3.4, *Biological Resources*. The development area of the proposed project is within the development footprint of Site 1 analyzed in the OSA PEIR. No new impacts to the NCCP would occur compared with those identified in the OSA PEIR.

3.11 MINERAL RESOURCES

a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

No Impact. No known mineral resources valuable to the region or the state were identified on Site 1 in the OSA PEIR, and no impact to mineral resources was identified in the PEIR. No additional impact to mineral resources would occur as a result of development of the Shea/Baker Ranch project compared to the original project analyzed in the OSA PEIR.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The project site is not used as a mining site and is not designated as a mining site in the City of Lake Forest General Plan. No impact would occur.

3.12 NOISE

Information in this section is based on the following technical report:

- *Noise Impact Analysis Shea Baker Ranch, City Of Lake Forest, California.* LSA Associates, July 2011.
- *Groundborn Viration Impact Analysis, Shea/Baker Ranch Project, City of Lake Forest, California, LSA Associates, August 2011.*

Copies of these studies are included in the Technical Appendices to this Initial Study (Appendix G).

Sensitive Land Uses in the Project Vicinity

Noise sensitive land uses are defined by the Lake Forest General Plan as activities that are interrupted by noise, include residences, schools, hospitals, religious meetings and recreation areas. There are no existing residential uses, schools or hospitals immediately adjacent to the project site. There are existing commercial and light industrial uses to the north, east, and south of the project site. A recreational vehicle storage site is located to the southwest of the project site. There are nurseries to the east and west of the project site. Federal lands lie to the west of the site, which is generally open space but contains a portion of land which is used by the FBI for training.

Methodology

Evaluation of noise impacts associated with the proposed project includes the following:

- Determine the short-term construction noise impacts on offsite sensitive receptors,
- Determine the long-term offsite mobile- and stationary-source noise impacts on onsite noise-sensitive uses and off-site sensitive receptors, and
- Evaluate the prior-adopted standard conditions, mitigation measures together with any project design features and determine if additional mitigation measures are required to reduce short-term and long-term onsite and offsite noise impacts.

This noise section examines two existing conditions: one without Alton Parkway (Existing Conditions) and one with Alton Parkway (Existing Conditions with Alton Parkway).

The Alton Parkway extension, which is currently under construction between Irvine Boulevard in the City of Irvine and Towne Centre Drive in the City of Lake Forest, will provide a parallel route to Bake Parkway and Lake Forest Drive. Once completed (as a six-lane roadway outside of Lake Forest and a four-lane roadway within Lake Forest), Alton Parkway could result in a redistribution of traffic within the study area as drivers choose the most direct path from the new options available to them.

Alton Parkway (four-lanes within the City of Lake Forest) will be completed prior to commencement of construction for the project. As part of the project, the Lake Forest portion of Alton Parkway will be widened to six lanes. The project will add traffic to a roadway network that already includes the Alton Parkway link. Therefore, intersection turn-movement volumes and intersection capacity utilization (ICU) worksheets in the traffic study for this project were prepared for an Existing Plus Alton Parkway (No Project) condition. This was accomplished by utilizing existing intersection turn movement counts and the Lake Forest Traffic Analysis Model (LFTAM) model to forecast traffic redistribution resulting from the completion of Alton Parkway. To provide the clearest picture of the impacts associated with the proposed land use, the Existing Plus Alton (No Project) condition was modeled with the full six-lane Alton Parkway in the traffic study, and this scenario is also analyzed in the noise study.

Overview of the Existing Noise Environment

The primary existing noise sources in the project area are commercial/industrial uses and transportation facilities. Traffic on State Route 241 (SR 241), Bake Parkway, Rancho Parkway, Commercentre Drive, future Alton Parkway, and other local streets is the main source contributing to the background noise. Vehicles and operations associated with adjacent commercial/warehouse uses also contribute to the ambient noise in the project vicinity. Occasional aircraft overflight generates noise higher than the other more steady background noise sources. However, the project site is not in a flight pattern area (i.e., take off or landing for any airports) and therefore aircraft noise is basically from private planes or high altitude overflight. Other contributing sources include intermittent noise associated with commercial uses and an FBI training facility to the west of the project site. The ambient noise survey conducted by LSA showed that noise in the project vicinity ranged from 55 to 64 dBA with the most significant contributor being traffic noise.

The Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD 77 108) was used to evaluate highway traffic-related noise conditions along the roadway segments in the project vicinity. Existing traffic volumes in the project's traffic study were used to assess the existing traffic noise impacts. A typical vehicle mix for Southern California was used. Table 3.12-1 provides the traffic noise levels along the

roadways adjacent to the project site under the existing conditions. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn.

Table 3.12-1 shows that, under Existing conditions, traffic noise levels along roadway segments in the project vicinity are moderate to high, with the 70 dBA CNEL confined within the roadway right-of-way for most of the roadway segments evaluated SR-241 would have its 70 and 65 dBA CNEL extending to 176 and 373 ft, respectively, from the centerline.

Table 3.12-1
Existing Traffic Noise Levels

Roadway Segment	*ADT*	*Centerline to 70 CNEL (ft)*	*Centerline to 65 CNEL (ft)*	*Centerline to 60 CNEL (ft)*	*CNEL (dBA) 50 ft from Centerline of Outermost Lane*
Bake Parkway between SR-241 and Commercentre	34,000	100	203	432	71.1
Alton Parkway between SR-241 and Commercentre	2,000	< 50	< 50	69	59.5
Rancho Parkway west of Bake Parkway	5,000	< 50	< 50	101	63.9

Source: LSA Associates, Inc., April 2011.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = Average Daily Traffic
CNEL = community noise equivalent level
dBA = A-weighted decibels
ft = feet
SR-241 = State Route 241

Table 3.12-2 shows that, under Existing with Alton Parkway conditions, traffic noise levels along roadway segments in the project vicinity would remain moderate to high, with the 70 dBA CNEL confined within the roadway right-of-way for most of the roadway segments evaluated SR-241 would have its 70 and 65 dBA CNEL extending to 189 and 401 ft, respectively, from the centerline.

Table 3.12-2
Existing with Alton Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
	16,000	67	126	263	67.9
Bake Pkwy. between SR-241 and Commercentre	26,000	86	171	362	70.0
Alton Pkwy. between SR-241 and Commercentre	31,000	91	190	406	71.4
Rancho Pkwy. west of Bake Pkwy.	5,000	< 50	< 50	101	63.9
Commercentre between Alton Pkwy. and Bake Pkwy.	6,000	< 50	53	114	64.7
SR-241 between Alton Parkway and Bake Parkway	49,000	189	401	860	75.6

Source: LSA Associates, Inc., April 2011.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to noise:

PPP N-1 (*OSA PEIR MMRP Legal Requirements for Noise*) Compliance with Chapter 11.16, Noise Control, of the Lake Forest Municipal Code.

PPP N-2 (*OSA PEIR MMRP Noise Standard Condition N1*) Prior to the issuance of a grading permit, the applicant shall produce written evidence, or other evidence deemed reasonably acceptable by the Director of Development Services, that all construction vehicles or equipment, fixed or mobile, operated within 1,000 feet of any residential dwelling unit shall be equipped with properly operating and maintained mufflers.

PPP N-3 (*OSA PEIR MMRP Noise Standard Condition N2*) Grading and construction, construction activities shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m. Monday through Friday; 6:00 p.m. and 8:00 a.m. Saturday; and at any time on Sunday or a federal holiday.

PPP N-4 (*OSA PEIR MMRP Noise Standard Condition N3*) Prior to the issuance of building permits for each structure or tenant improvement other than a parking structure, the applicant shall submit a final acoustical report prepared to the satisfaction of the Director of Development Services. The report shall show that the development will be sound attenuated against present and projected noise levels, including roadway and railroad, to meet City interior and exterior noise standards. In order to demonstrate that all mitigation measures have been incorporated into the project, the report shall be accompanied by a list identifying the sheet(s) of the building plans that include the approved mitigation measures.

PPP N-5 (*OSA PEIR MMRP Legal Requirements for Noise*) Compliance with Chapter 11.16, Noise Control, of the Lake Forest Municipal Code.

Project Design Features

Based on the project level Noise Study, the applicant has incorporated the following Project Design Features (PDFs) which attenuate sound and prevent potential noise impacts:

PDF N-1 Alton Parkway (Planning Areas H and K): Outdoor living areas, such as backyard, patio, or balcony are required to be protected by stand-alone sound barriers. Applicant shall provide a minimum 6 ft high sound barrier (minimum 5 dBa) along the perimeter of backyard or patio and 5 ft high sound barrier along the perimeter of second-floor balcony. The noise barriers must consist of materials with a minimum density of 3.5 pounds per square foot or combination of materials that meet this requirement. Such barrier materials include, but are not limited to, the following: ¾-inch (in) plywood, ¼ in tempered glass, ¼ in laminated glass, ¼ in Plexglas, or masonry.

PDF N-2: Alton Parkway (Planning Area A (South)): Outdoor living areas, such as backyard, patio, or balcony are required to be protected by stand-alone sound barriers. Applicant shall provide 5 ft high sound barrier (minimum 5 dBa) along the perimeter of backyard or patioand 5 ft high sound barrier along the perimeter of second-floor balcony. The noise barriers must consist of materials with a minimum density of 3.5 pounds per square foot or combination of materials that meet this requirement. Such barrier materials include, but are not limited to, the following: ¾-inch (in) plywood, ¼ in tempered glass, ¼ in laminated glass, ¼ in Plexglas, or masonry.

PDF N-3: SR-241: Outdoor living areas, such as backyard, patio, or balcony are required to be protected by stand-alone sound barriers. 10 ft high sound barrier along the property line along the SR-241 at the south/east end, decreasing to 6 ft high at the north/west end. The noise barriers must consist of materials with a minimum density of 3.5 pounds per square foot or combination of materials that meet this requirement. Such barrier materials include, but are not limited to, the following: ¾-inch (in) plywood, ¼ in tempered glass, ¼ in laminated glass, ¼ in Plexglas, or masonry.

PDF N -4: SR-241, Planning Area A (North): Noise-sensitive rooms, such as bedrooms and living rooms, within the following impact areas are required to have windows with Sound Transmission Class (STC)-28 or higher for ground floor units and windows with STC-32 or higher (minimum 5 dBa).

PDF N-5: Mechanical Ventilation/Air Conditioning. Noise-sensitive rooms, such as bedrooms and living rooms, within the following impact areas are required to be equipped with air conditioning, a form of mechanical ventilation:

- Alton Parkway, Planning Areas A (North), A (South), F, H, I, K, and L;
- Bake Parkway, Planning Areas C, D, and F;
- Rancho Parkway, Planning Areas A (North), A (South), B, and I; and
- Commercentre Drive, Planning Area F.

PDF N-6 All residential onsite heating, ventilating, and air-conditioning (HVAC) units shall be designed to meet the City's Municipal Code noise requirements.

PDF N-7: A sound barrier with a minimum height of 6 ft along the project boundary directly adjacent to the loading/unloading areas of the existing office/commercial/warehouse uses located along the project site's southern, eastern and northeastern boundaries.

Applicable OSA Program EIR Mitigation Measures (MM)

The following mitigation measures (3.10-1 to 3.10-3) are taken directly from the OSA PEIR Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed Shea/Baker Ranch project.

Noise MM-1 (OSA Program EIR Mitigation Measure MM 3.10-1). A condition of approval shall be placed on all Site Development Permit and/or Use Permit approvals for site-specific developments, which states:

- Construction staging areas and operation of earth moving equipment on a project site shall be located more than 25 feet away from sensitive receptors (such as residences, schools, hospitals). If equipment will be operated within 25 feet of any sensitive receptor, the applicant shall prepare a construction plan which quantifies the anticipated vibration levels associated with the construction (in VdB) and the length of time the construction is to occur, and documents efforts to minimize impacts associated with groundborne vibration.

- **The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.**

- **The construction contractor shall locate equipment staging in areas that will create the greatest distance practical between construction-related noise sources and noise-sensitive receptors such as residential uses nearest the project site during all project construction.**

- **The construction contractor shall obtain the City's approval for its haul plan, with the planned haul truck routes avoiding residential areas to the extent feasible.**

Noise MM-2 (OSA Program EIR Mitigation Measure MM 3.10-2). Prior to the **first approval of the tentative tract map** ~~issuance of a Site Development Permit and/or Use Permit~~ for site-specific development within the Project Area, the City shall conduct a tiered site-specific analysis under CEQA to determine whether the individual project will expose sensitive receptors to either a substantial increase in ambient noise resulting from increased traffic volumes generated by that project or excessive groundborne vibration or groundborne noise levels. Where significant impacts are identified, appropriate mitigation shall be required. *(Satisfied by Noise Impact Analysis for Shea Baker Ranch, LSA, July 2011)*.

Noise MM-3 (OSA Program EIR Mitigation Measure MM 3.10-3). A condition of approval shall be placed on all Site Development Permit and/or Use Permit approvals for site-specific developments, which states:

- Prior to issuance of a building permit, the applicant shall submit plans for shielding of all HVAC equipment to provide noise attenuation that will reduce noise from HVAC systems to 65 dBA or less when measured at 50 feet from the noise source.

The Appendix G of the CEQA Guidelines and *The City of Lake Forest CEQA Significance Thresholds Guide* (March 2009) were utilized as guidance in determining potential impacts to water resources (noise). A project would normally have a significant impact if it would:

a) Generate traffic that would cause a noise level increase of 3dB or more on a roadway segment adjacent to a noise sensitive land use, which include, but are not limited to residential (single-family, multi-family, mobile home), hotels, motels, nursing homes, hospitals, parks, playgrounds, and recreation areas, and schools?

No New Impact.

The OSA PEIR found that three roadway segments (SR-241/Alton to SR-241/Lake Forest Drive, Alton/SR-241 to Alton South, and Rancho West to Rancho/Bake Parkway) would potentially be located adjacent to sensitive uses and thus could expose these uses to a substantial increase in ambient noise resulting from increased traffic volumes from Year 2030 General Plan buildout conditions. The PEIR stated that future projects are subject to environmental review as project-level discretionary approvals would be considered by the City to determine if projects would expose sensitive receptors to a substantial increase in ambient noise resulting from increased traffic volumes. A project level Noise Study has evaluated roadway noise in the vicinity of the project area.

Long-Term Traffic Noise Impacts

Project-related long-term vehicular trip increases are anticipated to be small when distributed to adjacent street segments. The proposed onsite residential uses would be directly adjacent to the future Alton Parkway and would be potentially exposed to traffic noise levels exceeding the exterior noise standard of 65 dBA CNEL, and/or would potentially exceed the interior noise standard of 45 dBA CNEL from exterior noise sources.

The FHWA highway traffic noise prediction model (FHWA RD 77 108) was used to evaluate highway traffic-related noise conditions along the roadway segments in the project vicinity. Because Alton Parkway is currently under construction and is expected to be in operation when the proposed project is constructed and implemented, for purposes of this analysis the "Existing with Alton" with Project conditions were analyzed; 2015 without and with Project, and 2030 without and with Project traffic volumes in the project's traffic study were used to assess the existing with Project and future traffic noise impacts. A typical vehicle mix for Southern California was used.

Table 3.12-3 provides the traffic noise levels along the roadways adjacent to the project site under the Existing with Alton with Project traffic conditions. Tables 3.12-4 and 3.12-5 provide the traffic noise levels along the roadways adjacent to the project site under the 2015 without and with Project traffic conditions. Tables 3.12-6 and 3.12-7 provide the traffic noise levels along the roadways adjacent to the project site under the 2030 without and with Project traffic conditions. These noise levels represent the worst- case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn.

Table 3.12-3
Existing with Alton and Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Bake Pkwy. between SR-241 and Commercentre	25,000	84	167	353	69.8	-0.2
Alton Pkwy. between SR-241 and Commercentre	36,500	100	211	453	72.2	0.8
Rancho Pkwy. west of Bake Pkwy.	5,000	< 50	< 50	101	63.9	0.0
Commercentre between Alton Pkwy. and Bake Pkwy.	6,000	< 50	53	114	64.7	0.0
SR-241 between Alton Parkway and Bake Parkway	51,000	194	411	883	75.8	0.2

Source: LSA Associates, Inc., April 2011.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = Average Daily Traffic
CNEL = community noise equivalent level
dBA = A-weighted decibels
ft = feet
SR-241 = State Route 241

Table 3.12-4
2015 Without Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Bake Pkwy. between SR-241 and Commercentre	30,000	93	187	398	70.6
Alton Pkwy. between SR-241 and Commercentre	27,000	87	175	371	70.1
Rancho Pkwy. west of Bake Pkwy.	5,000	< 50	< 50	101	63.9
Commercentre between Alton Pkwy. and Bake Pkwy.	9,000	< 50	70	149	66.4
SR-241 between Alton Parkway and Bake Parkway	60,000	215	458	984	76.5

Source: LSA Associates, Inc., April 2011.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = Average Daily Traffic
CNEL = community noise equivalent level
dBA = A-weighted decibels
ft = feet
SR-241 = State Route 241

Table 3.12-5
2015 With Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Bake Pkwy. between SR-241 and Commercentre	28,000	89	179	380	70.3	-0.3
Alton Pkwy. between SR-241 and Commercentre	31,500	95	193	411	70.8	0.7
Rancho Pkwy. west of Bake Pkwy.	8,000	< 50	64	138	65.9	2.0
Commercentre between Alton Pkwy. and Bake Pkwy.	7,000	< 50	59	126	65.3	-1.1
SR-241 between Alton Parkway and Bake Parkway	60,000	215	458	984	76.5	0.0

Source: LSA Associates, Inc., April 2011.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = Average Daily Traffic
CNEL = community noise equivalent level
dBA = A-weighted decibels
ft = feet
SR-241 = State Route 241

Table 3.12-6
2030 Without Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Bake Pkwy. between SR-241 and Commercentre	35,000	101	207	440	71.3
Alton Pkwy. between SR-241 and Commercentre	38,000	106	218	465	71.6
Rancho Pkwy. west of Bake Pkwy.	5,000	< 50	< 50	101	63.9
Commercentre between Alton Pkwy. and Bake Pkwy.	10,000	< 50	75	160	66.9
SR-241 between Alton Parkway and Bake Parkway	107,000	314	672	1,447	79.0

Source: LSA Associates, Inc., April 2011.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = community noise equivalent level
dBA = A-weighted decibels
ft = feet
SR-241 = State Route 241

Table 3.12-7
2030 With Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Bake Pkwy. between SR-241 and Commercentre	33,000	98	199	424	71.0	-0.3
Alton Pkwy. between SR-241 and Commercentre	42,000	113	233	497	72.0	0.4
Rancho Pkwy. west of Bake Pkwy.	10,000	< 50	75	160	66.9	3.0
Commercentre between Alton Pkwy. and Bake Pkwy.	8,000	< 50	64	138	65.9	-1.0
SR-241 between Alton Parkway and Bake Parkway	106,000	312	668	1,438	79.0	0.0

Source: LSA Associates, Inc., April 2011.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = community noise equivalent level
dBA = A-weighted decibels
ft = feet
SR-241 = State Route 241

Offsite Traffic Noise Impacts

The OSA PEIR found that three roadway segments (SR-241/Alton to SR-241/Lake Forest Drive, Alton/SR-241 to Alton South, and Rancho West to Rancho/Bake Parkway) would potentially expose sensitive uses to a substantial increase in ambient noise resulting from increased traffic volumes from Year 2030 General Plan buildout conditions. A doubling of the traffic volume is needed for a 3 dB increase in traffic noise. Tables 3.12-3, 3.12-5, and 3.12-7 show the traffic noise levels for the with project scenario for the Existing with Alton Parkway, 2015, and 2030 conditions, respectively. Project-related traffic noise level increase would be 0.9 dBA or less for the Existing with Alton Parkway condition. For future years (2015 and 2030), project-related traffic noise level increase would be 0.7 dBA or less for most roadway segments in the project vicinity, except along Rancho Parkway west of Bake Parkway, where there are commercial and office uses along both sides of the road. Project-related traffic noise level increase along this segment of Rancho Parkway would be 2 to 3 dBA as shown in Table 3.12-7. However, because there are no noise-sensitive land uses in the project vicinity along Rancho Parkway west of Bake Parkway that would be exposed to traffic noise levels exceeding the City's noise standards, no significant offsite traffic noise impacts would occur.

Onsite Traffic Noise Impacts

Table 3.12-7 shows that several roadway segments that would be directly adjacent to the project site would have the 65 dBA CNEL noise contour extending to beyond the roadway right-of-way. Therefore, outdoor living areas associated with the proposed residential uses would be within the 65 dBA CNEL noise impact zone from these roadway segments in the project area:

- Alton Parkway, within 233 ft of the roadway centerline;
- Bake Parkway, within 199 ft of the roadway centerline;
- Rancho Parkway, with 75 ft of the roadway centerline;

- Commercentre Drive, within 64 ft of the roadway centerline; and
- SR-241, within 668 ft of the centerline.

Based on the preliminary site plans for Tentative Tract Map No. 16466, there are variations in the elevation for the proposed onsite residential uses and major roadways (Alton Parkway, Bake Parkway, and SR-241) surrounding the project site. The elevation difference between the roads and the proposed onsite residential units would provide noise shielding from the embankment of the higher side. The Noise Study summarizes the elevation difference between these major roadways and the residential units in different phases and potential noise attenuation from the elevation difference.

- **Phase 1A, Planning Area C:** The lots along Bake Parkway are generally 18 to 20 ft above the road (8 dBA).);
- **Phase 1A, Planning Area D:** The lots along Bake Parkway are generally 17 to 20 ft above the road (8 dBA).);
- **Phase 1A, Planning Area F:** The lots along future Alton Parkway are generally 30 to 47 ft above the road (12 dBA or more).);
- **Phase 1A, Planning Area B:** The lots along Rancho Parkway vary from 20 ft above the road at the west end (8 dBA) to 3 ft above the road at the east end (2 dBA).);
- **Phase 1B, Planning Area A (North):** The lots along Alton Parkway vary from 15 to 20 ft above the road (8 dBA); the lots along Rancho Parkway vary from 5 ft above the road at the west end (4 4 dBA) to 20 ft below the road (8 dBA) and then become 11 to 13 ft below the road (6 dBA); the lots along SR-241 vary from 18 ft below the toll road (8 dBA) to 8 ft below (4 dBA) then become level (0 dBA) with the toll road for the last one-third1/3 at the southeast.;
- **Phase 2, Planning Area A (South):** The lots along Alton Parkway vary from 35 ft above the road at the south end (12 dBA or more) to 11 ft above the road at the north end (6 dBA).);
- **Phase 3A, Planning Area L:** The lots along Alton Parkway vary from 40 ft above the road in the south half (12 dBA or more) and 46 to 48 ft above the road in the north half (12 dBA or more).);
- **Phase 3A, Planning Area E:** All lots are away from the major roadways.;
- **Phase 3B, Planning Area G:** All lots are away from the major roads.;
- **Phase 3B, Planning Area H:** The lots along future Alton Parkway vary from 7 ft to 10 ft above the road in the south half (4 dBA) to 6 to 0 ft above the road in the north half (4 to 0 dBA).);
- **Phase 3B, Planning I:** The lots along Alton Parkway vary from 6 ft (4 dBA) to 13 ft (6 dBA) below the road going from south to north.; and
- **Phase 3B, Planning K:** The lots along future Alton Parkway vary from 4 ft (2 dBA) to 12 ft (66 dBA) above the road going from south to north.

Based on the project's preliminary site plan, there are multifamily dwelling units proposed along Alton Parkway that would be 105 ft (71.5 dBA CNEL without shielding from elevation difference) to 180 ft (66.7 dBA

CNEL without shielding from elevation difference) from the roadway centerline, and there are single family residential lots that would be 135 ft (68.8 dBA CNEL without shielding from elevation difference) to 180 ft (66.7 dBA CNEL without shielding from elevation difference) from the roadway centerline.

Similarly, there are multifamily dwelling units proposed along Bake Parkway that would be 90 ft (70.5 dBA CNEL without shielding from elevation difference) to 105 ft (69.5 dBA CNEL without shielding from elevation difference) from the roadway centerline, and single-family residential lots that would be 90 ft (70.5 dBA CNEL without shielding from elevation difference) to 100 ft (69.9 dBA CNEL without shielding from elevation difference) from the roadway centerline. These residential units would be potentially exposed to traffic noise exceeding the City's 65 dBA CNEL exterior noise standard for the outdoor living area without shielding provided by the elevation difference between the road and these residential units.

There are 594 multifamily (apartments) DU that and 25,000 sf of neighborhood retail use proposed on the northeast corner of Alton Parkway/Rancho Parkway intersection. These multifamily/apartment units proposed adjacent to the SR-241 that would be within 668 ft of its centerline would also be potentially impacted by traffic noise exceeding the 65 dBA CNEL noise standard for outdoor living areas without shielding provided by the elevation difference between the toll road and these noise-sensitive uses. The shortest distance from these noise-sensitive land uses to the centerline of the toll road is approximately 200 ft, which would be exposed to 73 dBA CNEL traffic noise without the shielding from the elevation difference.

When potential noise attenuation from elevation difference is included, traffic noise would be reduced at the following onsite residential areas:

- Phase 1A, Planning Area C: The lots along Bake Parkway that are 18 to 20 ft above the road would be exposed to traffic noise levels reaching 62.5 dBA CNEL;

- Phase 1A, Planning Area D: The lots along Bake Parkway that are 17 to 20 ft above the road would be exposed to traffic noise levels reaching 62.5 dBA CNEL;

- Phase 1A, Planning Area F: The lots along future Alton Parkway that are 30 to 47 ft above the road would be exposed to traffic noise levels reaching 56.8 dBA CNEL;

- Phase 1B, Planning Area A (North): The lots along Alton Parkway that are 15 to 20 ft above the road would be exposed to traffic noise levels reaching 63.5 dBA CNEL; the lots along SR-241 that are 18 ft below the toll road would be exposed to traffic noise levels reaching 65 dBA CNEL and those that are 8 ft below would be exposed to traffic noise levels reaching 69 dBA CNEL. Those that are at the same level with the toll road would be potentially exposed to traffic noise levels reaching 73 dBA CNEL at the southeast;

- Phase 2, Planning Area A (South): The lots along Alton Parkway that are 35 ft above the road would be exposed to traffic noise levels reaching 59.5 dBA CNEL and those that are 11 ft above the road would be exposed to traffic noise levels reaching 65.5 dBA CNEL;

- Phase 3A, Planning Area L: The lots along future Alton Parkway that are 40 ft above the road would be exposed to traffic noise reaching 56.8 dBA CNEL and those that are 46 to 48 ft above the road would be exposed to traffic noise levels reaching 56.8 dBA CNEL;

- Phase 3B, Planning Area H: The lots along future Alton Parkway that are 7 ft to 10 ft above the road would be exposed to traffic noise levels reaching 64.8 dBA CNEL and those that are at the same level as the road would be exposed to traffic noise reaching 68.8 dBA CNEL;

- Phase 3B, Planning I: The lots along Alton Parkway that area 6 ft below the road would be exposed to traffic noise reaching 64.8 dBA CNEL and those that are 13 ft below the road would be exposed to traffic noise reaching 62.8 dBA CNEL; and

- Phase 3B, Planning K: The lots along future Alton Parkway that are 4 ft above the road would be exposed to traffic noise levels reaching 66.8 dBA CNEL and those that are 12 ft above the road would be exposed to traffic noise levels reaching 62.8 dBA CNEL.

Based on the analysis presented in LSA Noise Study, exterior and interior noise standards can be achieved with noise attenuation from the elevation difference between major roadways and the residential units in different phases, as well as implementation of PPPs and PDFs. Detailed calculations based on architectural drawings for specific projects within the project site would be provided as part of PPP N-3 to demonstrate that the City's noise standards are not exceeded and all PDFs are incorporated in to the reduction after incorporation architectural plans for the buildings and implemented with building construction.

All neighborhood parks proposed on the project site are within residential neighborhoods and are away from major streets. Therefore, no significant traffic noise impacts would be expected to affect these parks.

Proposed residential units along Bake Parkway, Rancho Parkway and Commercentre Drive would be outside of the 65 dBA CNEL impact zone. No sound barriers are required for their outdoor living areas (backyard, patio, or balcony).

With PDFs listed above and the 24 dBA exterior-to-interior noise attenuation provided by the standard building shell in warm climate when windows are closed (Protective Noise Levels, Environmental Protection Agency [EPA] 550/9-79-100, November 1978), the proposed residential structures within the 69 dBA CNEL noise impact zone from these roadway segments in the project area would not need additional building facade upgrades.

Proposed residential units along Alton Parkway, Bake Parkway, Rancho Parkway and Commercentre Drive would be outside of the 69 dBA CNEL impact zone. Therefore, no building facade upgrades, such as windows with STC ratings higher that standard building construction provides, are required for these interior noise sensitive rooms (bedrooms and living room).

Mechanical ventilation, such as air conditioning, would be provided by PDF N-6 for noise-sensitive rooms that are exposed to traffic noise exceeding 57 dBA CNEL.

The OSA PEIR found that three roadway segments (SR-241/Alton to SR-241/Lake Forest Drive, Alton/SR-241 to Alton South, and Rancho West to Rancho/Bake Parkway) would potentially expose sensitive uses to a substantial increase in ambient noise resulting from increased traffic volumes from Year 2030 General Plan buildout conditions. With implementation of PPPs, PDFs, and OSA PEIR mitigation measures, the noise study substantiates that impacts would be less than significant. There are no new impacts compared to the OSA PEIR.

b) Exposure of persons to or generation of stationary noise levels in excess of standards established by the City of Lake Forest as specified by the exterior noise standards set fourth in the Noise Control Chapter of the Lake Forest Municipal Code?

No New Impact.

Long-Term Stationary-Source Impacts

The proposed onsite residential uses would be potentially exposed to noise from truck delivery, loading/unloading activities, as well as other activities at the parking lot associated with existing office/commercial/warehouse uses to the north, east, and south of the project site. These activities are potential point sources of noise that could affect proposed residential uses adjacent to the loading area.

The existing office/commercial/warehouse uses to the north, east, and south have loading/unloading areas located approximately 100 feet from the project boundary. Noise associated with loading/unloading activities at these commercial/warehouse uses would potentially affect onsite residences if they are located near the project boundary. Other offsite, noise-producing activities may include outdoor air conditioning units, parking, traffic, and pedestrian activity within the parking lot of the commercial/warehousing uses. Most of the events are intermittent in nature and usually of a very short duration, lasting a few seconds. The combination of the intermittent activities, even over the course of a day, does not amount to a significant amount of time.

The OSA PEIR concluded that with implementation of MM 3.10-3, impacts associated with a permanent increase in ambient noise levels resulting from stationary sources would be reduced to a less-than-significant level.

Truck Delivery and Loading/Unloading

Delivery trucks (including Federal Express, United Parcel Service, and other trucks) and loading/unloading (including forklift) operations for the existing office/commercial/warehousing uses would result in maximum noise readings similar to loading and unloading activities for other projects, which generate a noise level of 75 dBA Lmax at 50 ft and are used in this analysis. Based on the above discussion, loading/unloading noise would be reduced by the 100 ft distance divergence to 69 dBA Lmax or lower at ground level of the nearest onsite location for residential uses. This range of maximum noise levels is lower than the exterior noise standards of 75 dBA Lmax during the day (7:00 AM–10:00 PM) but would exceed the 65 dBA Lmax standard during the night (10:00 PM–7:00 AM) if nighttime activities occur. Since there would not be nighttime activities at the adjacent office/commercial/warehouse uses, the nighttime maximum noise level standard is not expected to be violated.

Although typical truck unloading processes take an average of 15–20 minutes, this maximum noise level occurs in a much shorter period of time (i.e., just a few minutes). However, if the loading/unloading activities last for more than 5 minutes in any hour, the City's 65 dBA noise level exceeded 8 percent of the time (L8) standard that is not to be exceeded for more than 5 minutes in any hour would be violated.

A sound barrier with a minimum height of 6 ft along the project boundary directly adjacent to the loading/unloading areas of the existing office/commercial/warehouse has been incorporated into the design as PDF N-7 below to ensure that the City's noise standard of 65 dBA would not be exceeded for more than 5 minutes in any hour during the daytime hours.

Parking Lot Activity

Representative parking activities, such as employees conversing and doors slamming, would generate approximately 60 dBA Lmax at 50 ft. This level of noise is much lower than that of the truck delivery and loading/unloading activities. With the noise attenuation effect from the distance divergence, noise in the parking lot would be attenuated to below 54 dBA Lmax and is not anticipated to be a significant noise issue with respect to residences proposed on the project site.

Interior Noise Standard

The typical maximum allowable interior noise levels for residential uses are 45 dBA between 10:00 PM and 7:00 AM and 50 dBA between 7:00 AM and 10:00 PM.

Typical sound level reduction of buildings in a warm climate such as Southern California is 12 dBA with windows opened and 24 dBA with windows closed (Protective Noise Levels, EPA 550/9-79-100, November 1978). Interior noise levels at the residences nearest the office/commercial/warehousing uses, attributable to loading/unloading activities from the offsite loading areas, would be reduced to 57 dBA Lmax with windows open and to 45 dBA Lmax with windows closed. Keeping windows closed ensures that interior noise standards would not be violated. Standard building construction for residential structures would be sufficient to meet the interior noise standard when air conditioning, a form of mechanical ventilation, is provided to ensure that windows can remain closed for prolonged periods of time. In addition, all proposed residential units would be equipped with heating, ventilating, and air-conditioning (HVAC) units. The City enforces building sound transmission loss and indoor fresh-air ventilation requirements specified in Chapter 35 of the Uniform Building Code. All residential HVAC units will be designed to meet the City's Municipal Code noise requirements.

Parks

The proposed neighborhood parks are designed for passive uses, including picnic and/or BBQ areas. No major noise-generating activities, such as competitive sports games, would occur at these neighborhood parks. Therefore, no new significant stationary noise impacts would occur with the implementation of these parks.

After implementation of PDFs, PPPs, and existing OSA mitigation measures, impacts from stationary sources would remain less than significant. Therefore, the Shea/Baker Ranch project does not result in new significant impacts compared to analysis of impacts for Site 1 of the OSA PEIR.

c) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

No New Impacts. Groundborne vibration has the potential to disturb people as well as to damage buildings. Groundborne vibration is usually measured in terms of vibration velocity, either the root-mean-square (rms) velocity or peak particle velocity (PPV). The rms is best for characterizing human response to building vibration, and PPV is used to characterize potential for damage.

Factors that influence groundborne vibration and noise include the following:

- Vibration Source: Vehicle suspension, wheel types and condition, track/roadway surface, track support system, speed, transit structure, and depth of vibration source

- Vibration Path: Soil type, rock layers, soil layering, depth to water table, and frost depth
- Vibration Receiver: Foundation type, building construction, and acoustical absorption

Among the factors listed above, there are significant differences in the vibration characteristics when the source is underground rather than at the ground surface. In addition, soil conditions are known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil, and the depth to bedrock.

The OSA PEIR identified impacts from groundborne vibration as potentially significant. In an effort to minimize the vibration levels experienced by sensitive uses located near these future construction sites, the PEIR required implementation of mitigation measure MM 3.10-1 to require the operation of vibration-generating equipment to be located as far away from vibration-sensitive sites as possible. To ensure that projects would not expose sensitive receptors to excessive groundborne vibration or groundborne noise levels MM 3.10-2 requires further CEQA review with the submittal of each area plan or tentative map. With implemention of mitigation measures, the OSA PEIR determined that impacts were less than significant.

Construction Vibration

Construction-related vibration generated by construction equipment can result in varying degrees of ground vibration, depending on the equipment. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings situated on soil near the active construction area respond to these vibrations that range from no perception to low rumbling sounds with perceptible vibrations and slight damage at the highest vibration levels. Typically, construction-related vibrations do not reach vibration levels that would damage nearby structures. However, old and fragile structures would require special consideration to avoid damage.

Vibration Study Tables 3.12-8 and 3.12-9, from the California Department of Transportation (Caltrans) Transportation- and Construction-Induced Vibration Guidance Manual (Caltrans, June 2004), show vibration damage potential threshold criteria and vibration annoyance potential criteria, respectively. Table 3.12-8 indicates that the vibration damage threshold is 0.5 PPV (inches per second [in/sec]) for historic and some old buildings and older residential structures, and 0.2 PPV (in/sec) for fragile buildings. For extremely fragile historic buildings, ruins, and ancient monuments, the threshold is 0.12 PPV (in/sec) from a transient source. However, for new residential structures and modern commercial buildings, the vibration damage threshold is 1.0 PPV and 2.0 PPV, respectively. Tables 3.12-8 and 3.12-9 were used to evaluate short-term, construction-related groundborne vibration.

Table 3.12-8
Guideline Vibration Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources[1]	Continuous/Frequent Intermittent Sources[2]
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans Transportation- and Construction-Induced Vibration Guidance Manual, June 2004.
[1] Transient sources create a single, isolated vibration event, such as blasting or drop balls.
[2] Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
in/sec = inches per second
PPV = peak particle velocity (VdB)

Table 3.12-9
Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources[1]	Continuous/Frequent Intermittent Sources[2]
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: Caltrans Transportation- and Construction-Induced Vibration Guidance Manual, June 2004.
[1] Transient sources create a single, isolated vibration event, such as blasting or drop balls.
[2] Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
in/sec = inches per second
PPV = peak particle velocity

Similarly, Vibration Study Table 3.12-10, from the FTA's Vibration Source Levels for Construction Equipment in Transit Noise and Vibration Impact Assessment (FTA, May 2006), shows that except for buildings extremely susceptible to vibration damage, most structures would not have any building damage until the vibration level increases to 94 vibration velocity decibels (VdB) or higher.

The proposed project may require the use of large bulldozers and trucks for the construction of onsite buildings. As shown in Table 3.12-11, Vibration Source Levels for Construction Equipment in Transit Noise and Vibration Impact Assessment (FTA, May 2006, Table 12-2), large bulldozers typically generate 0.089 inches per second (in/sec) PPV or 87 VdB at 25 ft. Large loaded trucks typically generate 0.076 PPV or 86 VdB at 25 ft. Based on the Caltrans Transportation Related Earthborne Vibration, Technical Advisory (Rudy Hendricks, July 24, 1992), the vibration level at 50 ft is approximately 6 VdB lower than the vibration level at 25 ft. Vibration at 100 ft from the source is more than 6 VdB lower than the vibration level at 50 ft, or more

than 12 VdB lower than the vibration level at 25 ft. Therefore, large bulldozers would potentially result in 81 VdB at 50 ft and 75 VdB at 100 ft. Loaded trucks would potentially result in 80 VdB at 50 ft and 74 VdB at 100 ft.

Table 3.12-10
Construction Vibration Damage Criteria

Building Category	PPV (in/sec)	Approximate L_v (VdB)
I. Reinforced concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Source: Transit Noise and Vibration Impact Assessment, May 2006.
in/sec = inches per second
PPV = peak particle velocity
L_v = velocity level in decibels

Table 3.12-11
Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV at 25 ft (in/sec)	Approximate L_v At 25 ft (VdB)
Pile Driver (impact), typical	0.644	104
Pile Driver (sonic), typical	0.170	93
Vibratory roller	0.210	94
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
Crack-and-seat operations	2.4	ND

Sources: Federal Transit Administration 2006 (except Hanson 2001 for vibratory rollers) and Caltrans 2000 for crack-and-seat-operations.
ft = feet
in/sec = inches per second
PPV = peak particle velocity
ND = No data
VdB = vibration velocity decibels

Based on the soils study report (Pacific Soils Engineering, Inc., November 5, 2002) for Tentative Tract Map No. 16466, Baker Ranch, City of Lake Forest, the surficial units on site include engineered and uncontrolled artificial fill, topsoil, colluvium/alluvium, and Terrace Deposits. The character of the onsite soil is partially a function of the underlying parent material. Soil developed on the Terrace Deposits and Capistrano Formation is predominantly silty to clayey sands. Sandy clays are presently developed upon the Monterey Formation.

The alluvium/colluvium consists of silty sands and clayey sands. The Terrace Deposits are typically tan/reddish brown silty/clayey sands with occasional pebble and cobble lenses.

Experience with groundborne vibration indicates that vibration propagation is more efficient in stiff clay soils than in loose sandy soils, and shallow rock seems to concentrate the vibration energy close to the surface and can result in groundborne vibration problems at large distances from the road. Factors such as layering of the soil and depth to water table can have significant effects on the propagation of groundborne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

As a worst-case scenario, potential vibration impacts are evaluated for large bulldozers and trucks to be used during construction of the onsite structures. Because the upper layers of the soil in the project area are mostly sandy/silty soil, the drop-off rate for the sandy/silty soil is used to estimate the vibration levels.

Offsite Construction Vibration Impacts

There are no existing residences immediately adjacent to the project site. The adjacent commercial buildings are at least 50 ft from the project construction area. Based on Table 3.12-11, large bulldozers would generate a vibration level of 0.089 PPV (in/sec) or 87 VdB at 25 ft. At a distance of 50 ft or more, the vibration level would be lower and would not exceed the 2.0 PPV maximum threshold for commercial buildings. Based on Table 3.12-9, the vibration level from large bulldozers would also not exceed the 0.1 PPV strongly perceptible threshold from continuous/frequent intermittent sources. Similarly, it would not expose the adjacent commercial buildings to vibration levels from onsite construction equipment (large bulldozers and loaded trucks) that exceed 81 VdB at a distance of 50 ft. This range of the vibration levels is lower than the 94 VdB construction vibration damage criteria for the commercial buildings, as shown in Table 3.12-10. Therefore, existing offsite receptors at the adjacent commercial uses may be exposed to distinctly perceptible vibration levels from onsite project construction, but the vibration would not reach the levels that are strongly perceptible to the workers and would not result in any structural damage.

Onsite Construction Vibration Impacts

In addition, based on the project's proposed phasing, residences in the first few phases (Phase 1A or 2) may be exposed to vibration impacts associated with building construction in later phases (Phases 2 or 3A). The residential buildings in earlier phases are at least 50 ft from the later phase project construction area. Based on Table 3.12-11, large bulldozers would generate a vibration level of 0.089 PPV (in/sec) or 87 VdB at 25 ft. At a distance of 50 ft or more, the vibration level would be lower and would not exceed the 1.0 PPV maximum threshold for new residential buildings. Similarly, the earlier phase residential buildings would not be exposed to vibration levels from later phase on-site construction equipment (large bulldozers and loaded trucks) that exceed 81 VdB at a distance of 50 ft. This range of the vibration levels is lower than the 94 VdB construction vibration damage criteria for the new residential buildings, as shown in Table 3.12-10. Therefore, future onsite receptors at the residential areas in earlier phases may be exposed to distinctly perceptible vibration levels from onsite project construction in later phases, but the vibration would not reach the levels that are strongly perceptible by the residents to cause nuisance and would not result in any structural damage.

Because Phases 1B and 3B are separated with the other phases by Rancho Parkway and Alton Parkway, respectively, that are more than 50 ft wide, vibration associated with construction activity in Phases 1B and 3B would result in vibration levels lower than those discussed above and is not expected to adversely affect residences in other phases (Phases 1A, 2, and 3A), and vice versa.

Long-Term Operational Impact

Vehicular Traffic

Because the rubber tires and suspension systems of trucks and other on-road vehicles isolate vibration, they don't usually cause groundborne noise or vibration problems. When on-road vehicles cause effects such as rattling windows, the source is almost always airborne noise. Groundborne vibrations are associated mostly with passenger vehicles and trucks traveling on poor roadway conditions such as potholes, bumps, expansion joints, or other discontinuities in the road surface. Smoothing the bumps or filling the potholes will usually solve the problems. As the project will construct new roads within the project boundary, there will be no potholes, bumps, expansion joints, or other discontinuities in the road surface that would generate groundborne vibration or noise impacts from vehicular traffic traveling on onsite streets.

Stationary Sources

Because the proposed project does not propose any facility or activity that would result in significant vibration on the project site, no long-term operational vibration impacts would occur from stationary sources.

Based on the above analysis, vibration from construction activities associated with the proposed Shea Baker Ranch project, including those from large bulldozers or loaded trucks, would not result in substantial vibration levels at the existing commercial structures adjacent to the project site. These vibration levels would not reach the 2.0 in/sec PPV threshold shown in Table 3.12-8 for commercial buildings or the 1.0 in/sec PPV threshold for new residential buildings recommended by Caltrans. Similarly, although the on-site construction vibration potentially could result in distinctly perceptible vibration levels at the existing commercial uses or at residences in earlier phases, the vibration level would not be sufficiently perceptible to cause annoyance. In addition, groundborne vibration from on road vehicles using the off-site streets would not result in any measureable changes in vibration level compared to the existing conditions and would not result in any vibration levels that would damage buildings. No substantial vibration impacts would occur as a result of the proposed project and there are no new significant impacts compared to the OSA PEIR.

d) A substantial permanent increase in "future with project" ambient noise levels for sensitive land uses (identified in the City of Lake Forest General Plan Table 3-1 in Section 3.3, Interior and Exterior Noise Standards) in the project vicinity above levels existing without the project?

No New Impact. As discussed in section 3.12a, the project would not generate a substantial permanent increase in ambient noise level compared to the OSA PEIR analysis for Site 1. Section 3.12b demonstrates that increases in noise levels related to stationary sources associated with the proposed project would not substantially increase the existing noise environment compared to the analysis in the OSA PEIR. Similarly, noise from project traffic along local roadways would not significantly increase noise levels in the project area compared to the OSA PEIR. Ambient noise impacts would remain less than significant. As a result, the proposed project would not result in new significant impacts as compared to OSA PEIR Site 1.

e) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

No New Impact.

The OSA PEIR determined that since construction activities would only occur during the permitted hours designated in the City of Lake Forest's Municipal Code Section 11.16.020 and would not occur during recognized sleep hours for residences or on days that residents are most sensitive to exterior noise. As such,

while the physical impact from an increase in ambient noise levels could occur from the construction activities, an adverse effect on the nearby residents would not occur. Impacts associated with substantial temporary or periodic increases in ambient noise levels in the project vicinity were considered to be less than significant with compliance with City and Municipal Code requirements.

Short-Term Construction-Related Impacts

Short-term noise impacts would be associated with excavation, grading, and erecting of buildings on site during construction of the proposed project. Construction-related short-term noise levels would be higher than existing ambient noise levels in the project area today, but would no longer occur once construction of the project is completed.

Two types of short-term noise impacts could occur during the construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance (passing trucks at 50 ft would generate up to a maximum of 87 dBA), the effect on longer term (hourly or daily) ambient noise levels would be small. Therefore, short-term construction-related impacts associated with worker commute and equipment transport to the project site would be less than significant.

The second type of short-term noise impact is related to noise generated during excavation, grading, and building erection on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment, and consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site, and therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 3.12-12 lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor.

Table 3.12-12
Typical Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 ft)	Suggested Maximum Sound Levels for Analysis (dBA at 50 ft)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81 to 96	93
Rock Drills	83 to 99	96
Jack Hammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Dozers	77 to 90	85
Tractors	77 to 82	80
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

Source: Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987.
dBA = A-weighted decibels
ft = feet
ft-lb/blow = foot-pound per blow

Typical noise levels range up to 91 dBA Lmax at 50 ft during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by three or four minutes at lower power settings.

Construction of the proposed project is expected to require the use of earthmovers, bulldozers, and water and pickup trucks. This equipment would be used on the project site. Based on the information in Table 3.12-12, the maximum noise level generated by each scraper on the proposed project site is assumed to be 87 dBA Lmax at 50 ft from the scraper. Each bulldozer would also generate 85 dBA Lmax at 50 ft. The maximum noise level generated by water and pickup trucks is approximately 86 dBA Lmax at 50 ft from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level during this phase of construction would be 91 dBA Lmax at a distance of 50 ft from the active construction area.

There are no existing residences immediately adjacent to the project site. However, based on the project's proposed phasing, residences in the first few phases (Phases 1A and 1B) may be exposed to noise from building construction in later phases (Phases 2 and 3A). Because Phase 3B is separated from the other phases by Alton Parkway, noise associated with construction activity in Phase 3B is not expected to adversely affect residences in earlier phases (Phases, 1A, 1B, 2, and 3A).

According to the City of Lake Forest Municipal Code, permissible hours of construction are 7 AM to 8 PM on weekdays and on Saturdays. Construction is not permitted on any national holiday or on any Sunday. These hours are included as conditions on any project construction permits and these limits will serve to minimize any adverse construction noise impact potential. As construction would not occur except during the times permitted in the Noise Ordinance, and as Section 11.16.020 of the Municipal Code allows construction noise in excess of standards to occur between these hours, the project would not violate established standards and would be less than significant. Therefore, construction-related noise impacts are less than significant.

During construction, it is estimated that the project would transport approximately two million cubic yards of excavated dirt from one area of the project site to another area on the different side of the future Alton Parkway. Approximately 3 years from the start of grading of Phase 1, it is anticipated the Alton crossing will take place and it is planned to take approximately 3 months. The dirt transport across Alton Parkway would be accomplished by either a temporary bridge or bridges or temporary road closure. Since there would be no noise-sensitive uses directly along the dirt transport corridor (within Phases 3A and 3B) during the time periods when dirt is being transported across Alton Parkway, none of the thresholds of significance would be exceeded in connection with the dirt transport. In addition, the dirt transport would be done within the project area and would not affect roadway segments in the project vicinity except for possible temporary closure of Alton Parkway.

Construction-related noise impacts from the proposed project would not be considered adverse; in addition, compliance with the City's construction hours requirement (PPP N-2) would reduce the impact to a less than significant level.

f) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The OSA PEIR determined that MCAS El Toro had been closed since July 1999 and that the project area no longer served as navigable airspace for the base. Therefore the OSA project was not subject to excessive noise levels associated with aircraft operation and there were no impacts.

There are no public-use airports within two miles of the project site (Airnav.com 2011), and the site is not in an airport land use plan. The nearest airport, John Wayne Airport, is over nine miles away. Therefore, the proposed project would not expose people to excessive noise levels and no mitigation is required. There are no new impacts as a result of the Shea/Baker Ranch project.

g) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. As with the OSA PEIR, there are no private airstrips or heliports in the vicinity of the project site (Airnav.com 2011). Therefore, the proposed project would not expose people to excessive noise levels and no mitigation is required. There are no impacts.

3.13 POPULATION AND HOUSING

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to population and housing:

PPP PH-1 (*OSA PEOR MMRP Standard Conditions and Legal Requirements for Population and Housing*) Approval of an Affordable Housing Implementation Plan (AHIP) is required by the Development Agreement.

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. There are two existing residences, a vehicle storage facility and a wholesale/retail nursery operation onsite. Those uses would be replaced by the proposed project. The project would provide 2,379 residential units and 25,000 square feet of commercial uses. Utilizing a factor of 2.91 persons per dwelling unit (as stated in Section 3.11, *Population and Housing* of the OSA PEIR and the City's General Plan), the proposed project's residential units would result in a population increase of approximately 6,923 persons within the City of Lake Forest. For purposes of estimating the number of future employees, the OSA PEIR utilized an employment generation factor of 1 person for every 500 square feet. The proposed project would generate 50 new employees for 25,000 square feet of commercial uses. The project would generate a total 6,923 new persons and 50 new employees.

The OSA PEIR assumed a maximum of 2,815 units and 320,000 square feet of commercial resulting in an increase of 8,192 residents and 640 employees, respectively for the Site 1. As compared to the project analyzed in the OSA PEIR, the proposed project reduces the number of residents by 1,269 and the number of employees by 590. Therefore, the proposed project is within the scope of, and adequately analyzed in, the OSA PEIR.

Project construction would generate construction employment. However, as the unemployment rate in Orange County in August 2011 was 9.0 percent (EDD 2011), it is expected that construction employment would draw workers from the local labor force rather than attract workers from out of the region. The project would not involve the extension of roads or other infrastructure offsite that could induce population growth offsite. The project would involve development of roads and utility infrastructure onsite.

The proposed project would provide 431 fewer residential units and 590 fewer employees as compared to estimates for Site 1 in the OSA PEIR. The current City of Lake Forest jobs to housing ration is 1.2. (Drukker 2011). While there is no standard of an optimal jobs-housing balance, a jobs-housing ratio of 1.2 is considered to be healthy. As analyzed in the OSA PEIR, the addition of housing units to a jobs rich city results in improvement of the jobs/housing balance. Project development would result in the City of Lake Forest being somewhat less jobs-rich, that is, would have a favorable impact on jobs-housing balance.

The project would not induce population growth beyond the existing population growth forecast for the City, as analyzed in the OSA PEIR. Therefore, population growth impacts would reduced compared to those identified in the certified OSA PEIR.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project would displace two existing residential units onsite. As the project would develop up to 2,379 housing units, the project would not require construction of replacement housing offsite, and no impact would occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The project would displace residents at two existing residences onsite. The project would not displace substantial numbers of people or require construction of replacement housing offsite, and no impact would occur. No adverse impact to displacement of housing or people was identified in the OSA PEIR.

3.14 PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection?

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to fire protection services:

PPP PS-1 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F1*) Prior to issuance of a grading permit, the applicant shall obtain approval of the Fire Chief for all fire protection access roads within 150 feet of all portions of the exterior of every structure on the site. The site plan shall indicate existing and any proposed fire hydrants. The site plan shall indicate the locations of the existing and/or proposed fire lane markings. Please contact the OCFA at (714) 573-6100 or visit the OCFA website to obtain a copy of the "Guidelines for Emergency Access."

PPP PS-2 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F2*) Prior to the issuance of a grading permit, the applicant shall submit construction details for any access gate to the Fire Chief for review and approval. The Fire Chief will approve the construction details if the Chief reasonably determines that the construction details are in compliance with the Uniform Fire Code and such other Federal, State, and Local laws, regulations, ordinances, standards, and policies as are applicable.

PPP PS-3 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F3*) Prior to the issuance of a building permit, the applicant shall submit evidence of the on-site fire hydrant system to the Fire Chief and indicate whether it is public or private. If the system is private, it shall be reviewed and approved by the Fire Chief prior to building permit issuance, and the applicant shall make provisions for the repair and maintenance of the system in a manner meeting the approval of the Fire Chief.

PPP PS-4 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F4*) Prior to the issuance of a building permit for combustible construction, the applicant shall submit a letter on company letterhead stating that water for fire-fighting purposes and all weather fire protection access roads shall be in place and operational as required by the Uniform Fire Code before any combustible materials are placed on the site.

PPP PS-5 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F5*) Prior to the issuance of a building permit, the applicant shall provide evidence of adequate fire flow. The "Orange County Fire Authority Water Availability for Fire Protection" form shall be signed by the applicable water district and submitted to the Fire Chief for approval. If sufficient water to meet fire flow requirements is not available an automatic fire extinguishing system may be required in each structure affected.

PPP PS-6 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F6*) Prior to the issuance of a building permit, plans for the automatic fire sprinkler system shall be submitted to the Fire Chief for review and approval. This system shall be operational prior to the issuance of a certificate of use and occupancy.

PPP PS-7 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F7*) Prior to the issuance of a certificate of use and occupancy, the fire alarm system shall be operational.

PPP PS-8 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F8*) Prior to the issuance of a building permit, the applicant shall contact the Orange County Fire Authority Hazardous Materials Disclosure Office at (714) 744-0463 to complete and submit a "Hazardous Materials Business Information and Chemical Inventory Packet."

PPP PS-9 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F9*) Prior to the issuance of a certificate of use and occupancy, all fire hydrants shall have a "Blue Reflective Pavement Marker" indicating its location on the street or drive per the Orange County Fire Authority Standard and are subject to review and approval by the Fire Chief. On private property these markers are to be maintained in good condition by the property owner.

PPP PS-10 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Public Services*) As requested by the Orange County Fire Authority, site-specific development plans shall include provisions for installation of Optical Traffic Preemption devices on new or upgraded traffic signals within the site area as deemed necessary by the City with input by the OCFA.

PPP PS-11 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Public Services*) Compliance with OCFA Very High Fire Severity Hazard Zone/Special Fire Protection Area guidelines.

PPP PS-12 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Public Services*) Payment of statutory fees for public services (or enter into mitigation agreement for schools as a project design feature). See Mitigation Measure 3.12-3.

No New Impact.

The Orange County Fire Authority (OCFA) provides fire protection and emergency medical services to the City of Lake Forest, and would provide such services to the project. Four OCFA fire stations would respond, as needed, to calls for service from the project; the four stations are described in Table 3.14-1 below.

Table 3.14-1
Orange County Fire Authority (OCFA) Stations

Station	Location	Equipment	Daily Staffing
FS 19	23022 El Toro Road, Lake Forest, about 4.6 miles southwest of the site	1 paramedic engine 1 reserve squad	2 firefighter-paramedics; 2 firefighters; various reserve personnel
FS 38	26 Parker, Irvine, about 2.3 miles west of the site	1 engine 1 medic van	2 firefighter-paramedics; 3 firefighters
FS 54	19811 Pauling, Lake Forest, about 1 mile north of site	1 paramedic assessment engine	1 firefighter-paramedic; 2 firefighters
FS 42	19150 Ridgeline Road, Lake Forest, about 2.6 miles northeast of the site	1 paramedic assessment engine 1 brush engine	1 firefighter-paramedic; 2 firefighters

Source: EIP 2008

The proposed project has substantially lower development intensity compared with development on Site No. 1 as proposed in the OSA PEIR (see Table 1 above). The project provides 436 fewer residential units and reduces commercial square footage by 295,000 square feet. Thus, the proposed project would result in decreased demands for fire protection and emergency medical services as compared to development of Site 1 analyzed in the PEIR. Project impacts to fire protection and emergency services were evaluated in the OSA PEIR as less than significant after implementation of mitigation measures 3.12-1 and 3.12-2. Mitigation Measure 3.12-1 requires that any development of Sites 1and 2 shall comply with OCFA's VHFSHZ/SFPA guidelines. Mitigation Measure 3.12-2 requires that prior to approval of each Master, Tentative Tract, or Project Tract Map, the site developers shall enter into a Secured Fire Protection Agreement with OCFA that will ensure an adequate level of service is maintained in the City. Mitigation measures 3.12-1 and 3.12-2 are incorporated into the proposed project.

To that end and in compliance with mitigation measure 3.12-1, a Fuel Modification Plan for Shea/Baker Ranch was approved by the OCFA in October 2010. The plan was designed to provide maximum safety for the community, particularly the northern edge of the community that has open space interface. The land north of Shea/Baker Ranch is part of a large open space preserve of native habitat. This land will remain in its natural condition in perpetuity. Because the native vegetation in southern California is dormant in the summer months, the threat of wildland fires increases during the hot months of the year.

Generally, fire safety is achieved through separation from natural open space. However, other techniques may be used to achieve the same result, based on a technical analysis of fire behavior in a given condition. A Fire Behavior Analysis Report was prepared for Shea/Baker Ranch. This report identified alternate means and methods to achieve fire safety. These measures include such things as managing the types, size and moisture content of plants adjacent to development within Fuel Modification Zones, prohibiting structural vents on the building sides facing open space, controlling the size of vents in the community, and adding fire sprinklers to all homes in the community.

Shea/Baker Ranch employs two fuel modification zones. Zone A ranges in width from 10' to 26' and may be located within the private property of individual homeowners or within commonly maintained landscaped areas. Zone B ranges in width from 74' to 130' and is located and within commonly maintained landscaped areas and maintained by a homeowners association. Within both of these zones, the type of plant material and its ultimate size is limited to species approved by OCFA.

No new significant impacts to fire protection are anticipated as a result of the proposed project compared to impacts of the OSA PEIR for Site 1. Implementation of existing OCFA regulations, the approved Fuel

Modification Plan, and existing OSA PEIR mitigation measures and PPPs ensure that impacts remain less than significant. Therefore, there are no new fire projection and emergency compared to those evaluated in the certified OSA PEIR.

Applicable OSA PEIR Mitigation Measures

The following mitigation measure is taken directly from the OSA PEIR with no changes made. It has been renumbered in this document for ease of reference. The mitigation measure listed applies to and will be implemented for the proposed Shea/Baker Ranch project.

PS MM-1 (*OSA PEIR MMRP Mitigation Measure 3.12-1*). Any development shall comply with OCFA's VHFSHZ/SFPA guidelines.

PS MM-2 (*OSA PEIR MMRP Mitigation Measure 3.12-2*). Prior to approval of each Master, Tentative Tract, or Project Tract Map, the site developers shall enter into a Secured Fire Protection Agreement with OCFA that will ensure an adequate level of service is maintained in the City.

b) Police protection?

No Impact. Impacts to emergency services were evaluated in the OSA PEIR as less than significant after implementation of mitigation measures. The proposed project involves reduced development intensity compared to development on Site 1 as analyzed in the OSA PEIR, and therefore would result in less increase in demand for police protection than site development as proposed in the OSA PEIR would have.

The Orange County Sheriff's Department (OCSD) provides police protection to the City of Lake Forest under contract with the City, and would provide police protection to the project. The California Highway Patrol provides secondary support services to county and city police services as needed. OCSD police services to the City of Lake Forest are based at two facilities: the OCSD Community Policing Center at Lake Forest City Hall, 25550 Commercentre Drive; and an OCSD substation in the City of Aliso Viejo. For Priority One calls for service, that is, emergency calls regarding potential threats to human life, OCSD's response time goal for the City of Lake Forest is to respond within six minutes; actual average response times per month between October 2003 and October 2004 ranged from 4 minutes 45 seconds to 6 minutes nine seconds (EIP Associates 2008).

OCSD staff serving the City of Lake Forest consists of a lieutenant, five Sergeants, three Investigators, 38 Deputies, an Investigative Assistant, five Community Services Officers, and a Crime Prevention Specialist. Services provided through the City include direct and preventative patrol, a Special Enforcement Team, Traffic Enforcement (motorcycle and commercial), a deputy assigned to the regional Directed Enforcement Team, School Resource Officers, Bike Patrol, Neighborhood and Business Watch programs, as well as emergency preparedness classes for the community (OCSD 2010).

Adequate police protection would be addressed by payment of applicable impact fees for police/sheriff pursuant to the Tentative Tract Map's conditions of approval. Therefore, following compliance with the Tentative Tract Map's conditions of approval regarding the payment of impact fees for police protection services, the project would not result in the deterioration of police services and would not require the expansion of physical police service facilities.

OCSD would provide emergency services to the site during construction, should an emergency incident occur. The impact to emergency services during construction would be short-term in nature. As the need for emergency services at the project site during construction would be minimal, the project's short term

impacts would not result in the deterioration of police services or require the expansion of physical police service facilities. Short-term construction impacts are less than significant.

Project operation is expected to result in fewer calls for service as compared to the project (Site No.1) analyzed in the OSA PEIR. The ability of the OCSD to support the needs of future growth is dependent on their financial ability to hire additional sworn personnel. Generally, staffing needs are addressed in OCSD's annual budgeting process. As indicated in the OSA PEIR, the OCSD is able to accommodate the needs of the City's projected growth. The project is not expected to create a need for new police facilities, and impacts to police protection would be less than significant. No mitigation is needed.

c) Schools?

No Impact.

The project site is within Saddleback Valley Unified School District (SVUSD), which would provide K-12 public school services to the project. Impacts to schools were found to be less than significant in the OSA PEIR. The proposed project includes 436 fewer residential units than assumed in the project analyzed (Site 1) in the OSA PEIR. Impacts were less then significant. The proposed project would therefore generate fewer students than anticipated in the OSA PEIR.

The need for additional school services is addressed by compliance with school impact assessment fees per Senate Bill 50 (SB 50). Payment of fees is considered full mitigation per California Government Code Section 65995(h). SB 50 establishes a per-pupil funding formula for new school construction, requires local districts to match state funds for new construction, allows school districts to establish reimbursement agreements with developers to cover their fees, and authorizes an Affordable Housing Assistance Program. The recorded Development Agreement (DA) includes provisions a for a school mitigation agreement.

These fees are collected by school districts prior to issuance of building permits. The proposed project would be required to pay school impact fees under the recorded DA and SB 50. Payment of these fees would offset impacts from increased demand for school facilities and services (from existing conditions) by providing an adequate financial base to construct and equip new and expanded schools. Impacts related to school services would be reduced compared to the OSA PEIR Site 1 project.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measure is taken directly from the OSA PEIR with no changes made. It has been renumbered in this document for ease of reference. The mitigation measure applies to and will be implemented for the proposed Shea/Baker Ranch project.

PS MM-2 (*OSA PEIR MMRP Mitigation Measure 3.12-3*). Consistent with current City requirements, the developer shall pay statutory school fees in effect at the time of issuance of building permits to SVUSD and/ or enter into a mitigation agreement.

d) Parks?

No Impact. As discussed below in Section 3.15, *Recreation*, demand for parks is determined by the population within the parks' service areas. The proposed project would involve the development of 436 fewer residences than would development of the site as analyzed in the OSA PEIR, and thus would generate approximately 1,269 fewer residents on the site than development per the OSA PEIR. As the proposed project would provide more parks and open space than development per the OSA PEIR would have, and

would generate reduced demand for park space, no new impact would occur compared to impacts analyzed in the PEIR. No adverse impact arising from construction of new or altered parks was identified in the PEIR, as construction of parks on Site 1 would have been part of the entire development on that site, impacts of which were analyzed in other topical sections of the OSA PEIR.

e) Other public facilities

No Impact. The Orange County Public Library provides library services to the City of Lake Forest through two branches: El Toro Library at 24672 Raymond Way and the Foothill Ranch Library at 27002 Cabriole Way in Lake Forest. The El Toro Library has an 85,000-item collection, while the Foothill Ranch Library contains 65,000 items. The County of Orange's standards for library service are 0.2 square feet of library space and 1.5 volumes of library materials per person. The two libraries in Lake Forest have a total of approximately 150,000 items while the City of Lake Forest's estimated population in 2010 is 80,604, for 1.86 items per person; thus, the Orange County Public Library is meeting the County standard for library collection size for the City of Lake Forest.

The project would add approximately 6,923 residents to the project site. At the County standard of 0.2 square feet and 1.5 collection items per person, the project would create needs for 1,386 square feet of library space and 10,385 additional collection items. The proposed project generates 1,269 fewer persons resulting in decreased demand for library services compared to the project analyzed in the OSA PEIR. Demand is reduced by 254 square feet and 1904 fewer collection items. The City of Lake Forest collects library impact fees from all residential development in the City on behalf of the Orange County Public Library. OSA PEIR determined that impact fees paid by the project applicant and provided to the Orange County Public Library would reduce project impacts to libraries, and impacts would remain less than significant. Therefore, there are no new impacts to library services compared to those identified in the OSA PEIR.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measure is taken directly from the OSA PEIR with no changes made. It has been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed Shea/Baker Ranch project.

PS MM-4 (OSA PEIR Mitigation Measure 3.12-4). Prior to issuance of building permits, the developer(s) shall pay to Orange County Public Library the library impact fees in effect at the time of building permit issuance.

3.15 RECREATION

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to recreation:

PPP R-1 (*OSA PEIR Project Design Feature for Recreation*) The proposed project includes community parks and neighborhood parks in excess of subdivision code requirements.

PPP R-2 (*OSA PEIR Standard Conditions and Legal Requirements for Recreation*) Compliance with the City's Subdivision Ordinance and Development Agreement obligations (Title 7 of the Lake Forest Municipal Code) is required of all new residential development.

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?

No New Impact. The City's established park standard is 5 acres of parkland per 1,000 persons. The OSA split up the required parkland dedication into two components and required 3 acres per 1,000 estimated population for neighborhood parks and 2 acres per 1,000 estimated population for the community park (the public facilities/sports park package). Pursuant to the recorded DA, each OSA development site is required to provide parkland or pay in-lieu fees to satisfy the neighborhood park requirement. In addition, in-lieu fees for community parks from all project sites will be used for development of the 45-acre sports park and Community/Civic Center. Impacts to park facilities were found to be less than significant in the OSA PEIR. The proposed project provides more onsite parkland while reducing the population, unit count and commercial square footage compared to OSA PEIR Site 1. The Shea/Baker Ranch project would not cause any new impact leading to deterioration of park facilities compared to impacts analyzed in the OSA PEIR.

The proposed project would involve development of fewer housing units, and would generate fewer residents onsite than would have development of Site 1 as analyzed in the OSA PEIR. The project proposes approximately 100 acres of opens space, with almost 37 acres of usable open space and parks onsite. The project provides a variety of recreational opportunities to serve the needs of various age groups and promote both passive and active opportunities. The new recreation facilities include approximately 12 acres of neighborhood parks, trails and paseos; a 7.46-acre Community Park; an 8.37 acre Central Linear Park (with 7 usable acres); and the 5.05-acre Borrego Linear Park (including a recreational trail). As shown in Figure 19, *Open Space and Recreation Plan*, neighborhood parks are identified according to the Planning Area in which they are located. For example, Neighborhood Park A is within Planning Area 1A. In instances where two parks are located within the same Planning Area, they area designated as 1 and 2, e.g., Neighborhood Parks C1 and C2.

Pursuant to the provisions of the OSA PEIR and the recorded DA, SBRA will meet the required parkland dedication requirements by providing 3 acres per thousand population in onsite neighborhood parks or in-lieu fees, and in-lieu fees at a rate of 2 acres per thousand population for community parks. The in-lieu fees for community parks will be used toward the 45-acre sports park and Community/Civic Center. Provision of adequate recreation facilities onsite ensures that substantial deterioration of existing park and recreational facilities would not occur. Therefore, impacts to recreation services would not be greater than those identified in the certified OSA PEIR.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

No Impact. As discussed above, the proposed project includes over 100 acres of open space areas onsite, with almost 40 acres of usable open space, including parks and trails. The project would not involve the development of offsite recreational facilities. Impacts of development of those areas would be part of the impacts of the whole project that are analyzed throughout Chapter 3 of this Initial Study. No additional impact would occur other than those impacts discussed in other topical sections, for example, air quality, noise, and transportation and traffic impacts. No adverse impact from construction of parks was identified in the OSA PEIR.

Open Space and Recreation Plan

Source: SBRA 2012

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3.16 TRANSPORTATION AND TRAFFIC

The analysis in this section is based in part on the following technical report(s):

- *Traffic Study, Shea Baker Ranch, City of Lake Forest, California*, LSA Associates, August 2011.
- *Construction and Development Phase Addendum Traffic Study*, LSA Associates, September 2011

Complete copies of these studies are included in the Technical Appendices to this Draft EIR (Appendix H).

Environmental Setting

The previous OSA PEIR analyzed the impacts of development on the Shea Baker Ranch and six additional properties within the City. For purposes of this traffic analysis, the trip generation and impacts of the current proposed project are analyzed against the traffic impacts identified for Site 1 in the OSA PEIR. The previous OSA PEIR analyzed the impacts of constructing 2,815 residential dwelling units, 120,000 square feet (sf) of commercial space, 200,000 square feet of business park, and a 26-acre park.

Table 3.16-1 depicts the Shea Baker Ranch project trip generation analyzed in the OSA PEIR and compares that to the currently proposed land uses. For the purposes of this analysis, the project produces 10,795 fewer daily trips, 690 fewer trips in the a.m. peak hour, and 981 fewer trips in the p.m. peak hour than the previous Site 1 project analyzed in the PEIR.

Table 3.16-1
Shea Baker Ranch Area Supplemental Trips

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
OSA PEIR Site 1 –Trip Generation									
Single-Family Detached	889	DU	8,508	168	498	666	569	329	898
Condominium	1,426	DU	11,622	242	714	956	642	470	1,112
Apartment	500	DU	3,360	50	205	255	200	110	310
Commercial	120	TSF	7,645	112	72	184	319	346	665
Park	26	Acre	41	0	0	0	1	1	2
Business Park	200	TSF	2,552	240	46	286	60	198	258
Total			**33,728**	**812**	**1,535**	**2,347**	**1,791**	**1,454**	**3,245**
Shea Baker Ranch Area Trip Generation									
Single-Family Detached	1,144	DU	10,948	215	644	858	728	428	1,155
Condominium	641	DU	5,224	109	321	429	288	212	500
Apartment	594	DU	3,992	61	242	303	239	129	368
Neighborhood Retail	25	TSF	2,758	40	26	66	115	125	240
Community Park	6.9	Acre	11	0	0	0	0	0	0
Total			**22,933**	**424**	**1,232**	**1,657**	**1,371**	**893**	**2,264**
Trip Difference			**-10,795**	**-388**	**-303**	**-690**	**-420**	**-561**	**-981**

ADT = average daily traffic
DU = dwelling unit
EIR = Environmental Impact Report
TSF = total square feet

Lake Forest Transportation Mitigation Program

The City of Lake Forest established the Lake Forest Transportation Mitigation (LFTM) Program, as part of the OSA PEIR, to allocate the costs of needed transportation improvements. LFTM identifies a set of citywide

transportation improvements designed to maintain adequate LOS on the City's arterial street system in the General Plan Buildout condition. This includes the planned extension of Alton Parkway from Irvine Boulevard to Towne Centre Drive, which is expected to be constructed by 2012 and to its ultimate width in 2015. The extension of Alton Parkway is currently under construction. LFTM improvements were developed using forecasts from the LFTAM traffic model and assume higher intensity land use on the SBRA site than currently proposed. The project will contribute to the need for the LFTM improvements.

Performance Criteria

The table below displays existing baseline intersection traffic level of service. The Intersection Capacity Unit (ICU) methodology used compares the volume-to-capacity (v/c) ratios of conflicting turn movements at an intersection, sums these critical conflicting v/c ratios for each intersection approach, and determines the overall ICU. The resulting ICU is expressed in of LOS, where LOS A represents free-flow activity and LOS F is overcapacity operations.

According to the City and the Orange County Growth Management Plan, LOS at an intersection is considered to be unsatisfactory when the ICU exceeds 0.90 (LOS D). At several study area intersections a different threshold has been adopted. The LOS is considered to be unsatisfactory at the following intersections when the Intersection Capacity Utilization (ICU) exceeds 1.00 (LOS E):

- El Toro Road/Trabuco Road (Orange County Congestion Management Program [CMP] intersection)
- El Toro Road/Interstate 5 (I-5) northbound ramps (Orange County CMP intersection)
- El Toro Road/Avenida de la Carlota (City of Laguna Hills; Orange County CMP intersection)

A description of the conditions associated with the different levels of service (A, B C, etc) and the relationship of ICU to LOS is provided in Table 3.16-2 below

Table 3.16-2
Intersection Level of Service

LOS	Interpretation	Volume to Capacity Ratio
A	There are no stables that are fully loaded, and few are close to loaded. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0.00 – 0.60
B	Represents stable operation. An occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel somewhat restricted within platoons of vehicles.	0.61 – 0.70
C	Stable operation continues. Full signal cycle loading is still intermittent, but more frequent. Occasional drivers may have to wait through more than one red signal intersection, and backups may develop behind turning vehicles.	0.71 – 0.80
D	Encompasses a zone of increasing restriction approaching instability. Delays to approaching vehicles may be substantial during short peaks with the peak period, but enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.	0.81 – 0.90
E	Represents the most vehicles that any particular intersection approach can accommodate. At capacity (V/C = 1.00), there may be long queues of vehicles waiting upstream of the intersection and delays may be great (up to several signal cycles).	0.90 – 1.00
F	Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration; hence, volumes carried are not predictable. V/C values are highly variable because full utilization of the approach may be prevented by outside conditions.	>1.00

Source: Highway Capacity Manual, 2000.

For the unsignalized Highway Capacity Manual (HCM 2000) methodology, LOS is presented in terms of total intersection delay and approach delay of the major and minor streets (in seconds per vehicle). The resulting delay is expressed in terms of LOS, where LOS A represents free-flow activity and LOS F represents overcapacity operation. LOS is a qualitative assessment of the quantitative effects of such factors as traffic volume, roadway geometrics, speed, delay, and maneuverability on roadway and intersection operations.

The relationship of delay and LOS at an unsignalized intersection is summarized below.

Level of Service	*Unsignalized Intersection Delay per Vehicle (sec)*
A	≤10.0
B	>10.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤35.0
E	>35.0 and ≤50.0
F	>50.0
Note: sec = seconds	

A project impact occurs when the intersection in question exceeds the acceptable LOS and the impact of the development is greater than 0.01. Project mitigation will be required back to 0.90 or baseline, if the baseline is greater than 0.90.

Existing Uses

The current project site is vacant except for nurseries and recreational vehicle storage. On July 20, 2010, the Lake Forest City Council adopted a General Plan Amendment and Zoning Change for the property to Residential and Mixed-Use. Access to the project site will be provided via Alton Parkway, Bake Parkway (via Dimension Drive), Rancho Parkway, and Commercentre Drive. Currently, Alton Parkway is under construction between Irvine Boulevard and Towne Centre Drive-Rancho Parkway (as a six-lane roadway outside of Lake Forest and a four-lane roadway within Lake Forest) and is assumed to be in place in the project buildout scenario. The extension of Rancho Parkway from its current terminus west of Bake Parkway to the intersection of Alton Parkway/Towne Centre Drive is a project design feature and will be constructed with the project. Existing open space, office and industrial uses, as well as planned residential and retail uses, surround the project site.

Existing Roadway Network

The project site is bounded on the North by SR-241, on the east by Bake Parkway, and on the south by Commercentre. Currently, no public roads run along the western side of the project. However, the extension of Alton Parkway south to Commercentre is currently under construction. Once completed, Alton Parkway will bound the project site on the west side. Other roads currently providing connectivity in the area of the project site include Rancho Parkway, which runs parallel to SR-241, and Dimension Drive.

The project's existing roadway network is illustrated in Figure 1 of the Traffic Study included as Appendix Hof this Initial Study.

Exiting Traffic Conditions

Existing intersection turn-movement volumes and ICU worksheets are provided in Traffic Study Appendix C. (LSA August 2011).The ICU methodology compares the volume-to-capacity (v/c) ratios of conflicting turn movements at an intersection, sums these critical conflicting v/c ratios for each intersection approach, and determines the overall ICU. The resulting ICU is expressed in terms of LOS, where LOS A represents free-flow activity and LOS F is overcapacity operations. Parameters set by the City for ICU calculations, including lane capacity, right-turn treatment, and clearance interval are included in the analysis.

All of the study area intersections currently operate at satisfactory LOS, as shown in Traffic Study Table B (included as Appendix H). The Alton Parkway extension, which is currently under construction between Irvine Boulevard in the City of Irvine and Towne Centre Drive in the City of Lake Forest, will provide a parallel route to Bake Parkway and Lake Forest Drive. Once completed (as a six-lane roadway outside of Lake Forest and a four-lane roadway within Lake Forest), Alton Parkway could result in a redistribution of traffic within the study area as drivers choose the most direct path from the new options available to them.

Alton Parkway (four lanes within the City of Lake Forest) will be completed prior to commencement of construction of the project. As part of the project, the Lake Forest portion of Alton Parkway will be widened to six lanes. The project will add traffic to a roadway network that already includes the Alton Parkway link. Therefore, intersection turn-movement volumes and ICU worksheets were prepared for an Existing Plus Alton Parkway (No Project) condition. This was accomplished utilizing existing intersection turn movement counts and the LFTAM model to forecast traffic redistribution resulting from the completion of Alton Parkway. To provide the clearest picture of the impacts associated with the proposed land use, the Existing Plus Alton (No Project) condition was modeled with the full six lane Alton Parkway. A summary of Existing Plus Alton (No Project) LOS is presented in Traffic Study Table C.

All of the study area intersections are expected to operate at satisfactory LOS in the Existing Plus Alton (No Project) condition.

The table below displays existing baseline intersection traffic level of service. The ICU methodology used compares the volume-to-capacity (v/c) ratios of conflicting turn movements at an intersection, sums these critical conflicting v/c ratios for each intersection approach, and determines the overall ICU. The resulting ICU is expressed in of LOS, where LOS A represents free-flow activity and LOS F is overcapacity operations.

Cumulative (Project Buildout Year) Baseline Traffic Volumes and LOS

The following intersections are forecast to operate at unsatisfactory LOS in Cumulative (Project Buildout Year) baseline conditions.

- Bake Parkway/Irvine Boulevard-Trabuco Road (a.m. peak hour)
- Los Alisos Boulevard/Muirlands Boulevard (p.m. peak hour)

The entire table of intersection LOS in Cumulative (Project Buildout Year) baseline conditions is provided as Traffic Study Table D.

Analysis Methodology/Approach

The latest LFTAM version was used to forecast 2015 and 2030 conditions with and without the project. The 2030 analysis is a cumulative scenario that includes ambient regional traffic growth, as documented in the traffic model, as well as the build out of the six vacant sites identified in the OSA PEIR.

Project impacts are identified at study area intersections for all future conditions, assuming no planned improvements to the circulation system except for two projects currently underway. First is the Alton Parkway extension from Irvine Boulevard to Towne Centre Drive. Second is the widening of Avenida de la Carlota between Paseo de Valencia and El Toro Road and subsequent changes in lane geometrics at the intersections of Paseo de Valencia and/Avenida de la Carlota and El Toro Road/Avenida de la Carlota. As previously noted, Alton Parkway is currently being constructed by the County of Orange Department of Public Works (as a six-lane roadway south of Commercentre Drive) and the City of Lake Forest (as a four-lane roadway north of Commercentre Drive). As part of the project, the Lake Forest section of Alton Parkway will be widened to six-lanes and Rancho Parkway (South) will be extended from its current terminus to Alton Parkway. The City of Laguna Hills has awarded a construction contract for Avenida de la Carlota widening and expects it to be completed by 2015. At any intersection where the project causes a significant impact, improvements identified in the LFTM program are applied to mitigate the impact.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to transportation and traffic:

PPP T-1 (*OSA PEIR MMRP Transportation/Traffic FFP1*) Prior to the issuance of a building permit, the applicant shall pay fees to the City of Lake Forest as prescribed in the Major Thoroughfare and Bridge Fee Program, including but not limited to the following:

- Foothill Circulation Phasing Plan – Zone 2
- Foothill/Eastern Transportation Corridor – Zone A
- Santiago Canyon Road

PPP T-2 (*OSA PEIR MMRP Transportation/Traffic PRK4*) (For commercial projects) No overnight sleeping or camping shall be permitted on the property. Signs stating such shall be posted within the parking lot.

PPP T-3 The applicant shall submit a Road Closure Plan pursuant to Paragraph E2e of the recorded Shea/Baker Ranch Development Agreement.

Project Design Features

The following Project Design Features relate to potential traffic and transportation impacts:

PDF T-1 The intersections of Alton Parkway/A Street, Alton Parkway/B Street, and Alton Parkway/Project driveway shall be signalized.

PDF T-2 Contributions toward LFTM improvements through payment of LFTM fees are required as part of the recorded Development Agreement.

a) Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

No New Impact.

Trip Generation

Traffic volume forecasts were prepared using the latest version of LFTAM. (LSA August 2011)Trip generation is not based on land use, but rather on socioeconomic data in this model. As a result, the current LFTAM model does not contain land use-based trip rates that can easily be used to determine the trip generation of a land development proposal. Trip generation, distribution, and assignment are integrated into the methodology that the traffic model uses to forecast trips. This information is provided in Appendix C. For the purposes of disclosing the approximate number of trips generated by the proposed project, trip rates contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, Eighth Edition (2008) were used to calculate the potential trip generation of the project.

As shown in Table 3.16-3, the project, including 2,379 DU, a 6.9-acre park, and 25,000 sf of neighborhood retail use, is forecast to generate 22,933 daily trips, including 1,657 a.m. peak-hour trips and 2,264 p.m. peak-hour trips.

Table 3.16-3
Shea Baker Ranch Area Trip Generation

Land Use (ITE Land Use Code) Trip Rates [1]	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Apartment (220)		DU	6.72	0.10	0.41	0.51	0.40	0.22	0.62
Church (560)		TSF	9.11	0.35	0.21	0.56	0.26	0.29	0.55
Condominium (230)		DU	8.15	0.17	0.50	0.67	0.45	0.33	0.78
Community Park (411)		Acre	1.59	0.00	0.01	0.01	0.02	0.02	0.04
Single Family Detached (210)		DU	9.57	0.19	0.56	0.75	0.64	0.37	1.01
Neighborhood Retail (820)		TSF	ITE Regression Equation						
Trip Generation									
Apartment	594	DU	3,992	61	242	303	239	129	368
Condominium	641	DU	5,224	109	321	429	288	212	500
Community Park	6.9	Acre	11	0	0	0	0	0	0
Single Family Detached	1,144	DU	10,948	215	644	858	728	428	1,155
Neighborhood Retail	25	TSF	2,758	40	26	66	115	125	240
Total			**22,933**	**424**	**1,232**	**1,657**	**1,371**	**893**	**2,264**

Notes:
ADT - Average Daily Traffic
DU - Dwelling Unit
TSF - Thousand Square Feet

Trip Distribution and Assignment

Directions of approach to and departure from the site were determined based on a select zone assignment from the LFTAM model. The LFTAM traffic analysis zone (TAZ) in which the project is located (TAZ 31–34 and 36) has five access points (centroids) via Alton Parkway, Rancho Parkway, Commercentre Drive, and Dimension Drive. It should be noted that full access is provided via Alton Parkway and Rancho Parkway from TAZ 36 (i.e., the parcel located on the northeast corner of Alton Parkway/Rancho Parkway). The project traffic volume and level of service analyses are consistent with the City's traffic model assumptions. A sensitivity analysis is provided later in this report to evaluate access alternatives for this specific parcel.

The model data represent the baseline traffic volumes plus the trips generated by the proposed project. The regional project trip distribution is illustrated in Traffic Study Figure 3 (see Appendix H). As illustrated, approximately 42 percent of the trips on site are destined to the north via Alton Parkway, Bake Parkway, and Towne Centre Drive; 49 percent to the south via Alton Parkway and Bake Parkway; and 9 percent to the east via Dimension Drive.

Existing Plus Project

To demonstrate the effect that the project would have on the study area intersections in the existing condition, an existing with project LOS analysis was prepared. Although it is infeasible to develop the project in this timeframe, CEQA requires that this analysis be conducted to disclose the project's potential impacts in an existing setting.

The extension of Alton Parkway is currently under construction. Therefore, Alton Parkway is assumed to be constructed in the Existing Plus Project scenario. For the purposes of CEQA, project traffic volumes are compared to traffic conditions as they currently exist (i.e., no Alton Parkway extension). However, this results in a comparison that mixes the effects of the project and the effects of Alton Parkway. To provide the clearest picture of the potential impacts of the Shea/Baker Ranch project, project traffic volumes were also compared to the Existing Plus Alton (No Project) scenario, which was modeled with a full six-lane Alton Parkway. The "Plus Alton" intersection volumes were developed by utilizing existing intersection turn movement counts and the LFTAM model to forecast traffic redistribution resulting from the completion of the Alton Parkway extension and the addition of project trip generation.

Implementation of the project would result in one significant project impact at Bake Parkway/Jeronimo Road (a.m. peak hour). This is the case whether project traffic is compared to either Existing or Existing with Alton traffic conditions. The impacted location is included in the LFTM program. The LFTM program plans a second northbound left-turn lane at this intersection. Providing a second northbound left-turn lane would result in the intersection operating at acceptable LOS C. ICU and LOS values for all study area intersections in existing plus project conditions are shown in Traffic Study Table F.

Future Plus Project

The project was analyzed in a cumulative (Project Buildout Year) condition. The Cumulative (Project Buildout Year) scenario includes ambient regional traffic growth, as documented in the LFTAM traffic model, as well as the build out of the six vacant sites identified in the OSA PEIR. Project-generated traffic would contribute to significant cumulative traffic impacts at two intersections:

- Bake Parkway/Irvine Boulevard-Trabuco Road (a.m. and p.m. peak hour)
- Bake Parkway/Jeronimo Road (a.m. peak hour)

ICU and LOS values for all study area intersections in cumulative with-project conditions are shown in Traffic Study Table G.

It should be noted that the intersection of Los Alisos Boulevard/Muirlands Boulevard operates at unacceptable LOS E without and with the project. However, the project does not contribute greater than 0.01 to the intersection ICU and therefore does not have a significant impact on the intersection.

The impacted locations noted above are included in the LFTM program. The proposed project is not forecast to have a significant impact at any non-LFTM intersections. To mitigate the project impacts, planned improvements from the LFTM program were applied at each intersection. The required improvements at each intersection to achieve satisfactory LOS are noted in Table 3.16-4.

Table 3.16-4
Cumulative (Project Opening) Plus Project with LFTM Improvements ICU Summary

	Intersection	Traffic Control	Intersection Approach Lanes[1]												Level of Service			
			Northbound			Southbound			Eastbound			Westbound			AM Peak Hour		PM Peak Hour	
			L	T	R	L	T	R	L	T	R	L	T	R	ICU	LOS	ICU	LOS
14	Bake Pkwy/Irvine Blvd-Trabuco Rd																	
	No-Project	Signal	1	3	0	2	3	1	2	3	1	2	3	1	1.06	F	0.93	E
	With LFTM Improvements	Signal	**2**	3	0	2	3	1	2	**2.5**	**1.5**	2	**4**	**1D**	**0.89**	**D**	**0.79**	**C**
22	Bake Pkwy/Jeronimo Road																	
	No-Project	Signal	1	3	1D	1	3	1D	2	2	1	1	2	0	0.91	E	0.80	C
	With LFTM Improvements	Signal	**2**	3	1D	1	3	1D	2	2	1	1	2	0	**0.79**	**C**	0.80	C
Notes:																		

[1] L = Left; T = Through; R = Right; **Bold and Underlined** = Improvement; F = Free Right Turn; D = De-Facto Right Turn; S = Shared Lane; **Bold** = Improved LOS

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Both intersections would operate at satisfactory LOS (LOS D or better) during both peak hours with implementation of the planned LFTM improvements as shown in Table G of the Traffic Study. Mitigation of the direct project impacts would be satisfied through payment of the traffic impact fee identified for the Shea/Baker Ranch project in the LFTM program.

The OSA PEIR determined that traffic related impacts were less than significant because all necessary improvements are already included in the LFTM.

As shown in Table 3.16-1, the current proposed Shea/Baker Ranch project is less intense, having fewer residential units and fewer square feet of office/commercial uses, and thus generates fewer trips than the land uses analyzed for Site 1 in the OSA PEIR. Therefore, the proposed project does not create any new significant impacts or increase the severity of any previously identified impacts identified in the OSA PEIR. Mitigation measures identified in the OSA PEIR shall be brought forward and remain applicable to the current project.

Based on the results of this traffic study, the project will impact the design or operation of the surrounding roadway system in the existing and cumulative (Project Buildout Year) conditions. Evaluation of intersection LOS shows that the addition of project traffic to baseline traffic volumes contributes to impacts at two intersections, as shown in Tables F and G of the traffic study. Both of the impacted intersections, Bake Parkway/Irvine Boulevard-Trabuco Road and Bake Parkway/Jeronimo Road, were identified as impacts in the OSA PEIR and have future programmed improvements identified in the LFTM program.

Both intersections would operate at satisfactory LOS (LOS D or better) during both peak hours with implementation of the planned LFTM improvements as shown in Traffic Study Table H. Mitigation of the direct project impacts would be satisfied through payment of the traffic impact fee identified for the proposed project in the LFTM program. The following improvements would be required and will be implemented by the LFTM program.

Bake Parkway/Irvine Boulevard-Trabuco Road

- Add a second northbound left-turn lane
- Add a fourth westbound through lane and a de facto westbound right-turn lane
- Restripe the eastbound approach to maintain two left-turn lanes and provide two exclusive through lanes, a shared through/right-turn lane, and an exclusive right-turn lane

Bake Parkway/Jeronimo Road

- Add a second northbound left-turn lane

Development Phasing Analysis

As identified above, two significant traffic impacts would result from implementation of the full project (2,379 dwelling units). The following analysis looks at the two intermediate construction phases to determine when the previously identified impacts will occur and which LFTM improvements are necessary for that phase.

2015 baseline (no project) conditions are compared to the development of 750 dwelling units, 1,344 dwelling units, and the full project's 2,379 dwelling units in Traffic Study Addendum (LSA 2011) Table E, included as Appendix h of this Initial Study. The 750-dwelling-unit and 1,344-dwelling-unit scenarios do not include development of the proposed park or the neighborhood retail use. The extension of Alton Parkway will be completed prior to the development of either the 750-dwelling-unit or 1,344-dwelling-unit scenarios. Rancho Parkway (South) will be extended from its current terminus to Alton Parkway in the 1,344-dwelling-unit scenario.

As displayed on Table E of the Traffic Study Addendum (Appendix H to this Initial Study), developing the first 750 dwelling units of the Shea Baker Ranch area will result in a significant impact to the intersection of Bake Parkway/Irvine Boulevard-Trabuco Road. Developing the additional 594 apartments at the northeast corner of Alton Parkway/Towne Centre Drive (concurrent with the extension of Rancho Parkway (South) to Alton Parkway) will not result in additional significant impacts.

The intersection of Bake Parkway/Irvine Boulevard-Trabuco Road could be returned to an acceptable LOS by providing a second northbound left-turn lane. The addition of a second northbound left-turn lane is one of the LFTM improvements programmed for this intersection. It should also be noted that the addition of a second northbound left-turn lane is sufficient to return the intersection to an acceptable LOS for the full project as well.

The current proposed Shea/Baker Ranch project is less intense and generates fewer trips than the land uses assumed and analyzed for this site in the OSA PEIR, and does not create any new significant impacts. The evaluation of the study area intersection LOS with construction of the project shows that the addition of project traffic to existing and cumulative (Project Buildout Year) traffic volumes will contribute to impacts at two intersections. However, the project will pay a traffic impact fee, as identified in the LFTM program. The planned LFTM improvements would mitigate the project impacts at these deficient locations to satisfactory LOS (LOS D or better) during both peak hours. Impacts remain less than significant after implementation of existing regulation (LFTM). As a result, there are no new significant impacts caused by the proposed project.

Construction

The future extension of Alton Parkway will traverse the Shea/Baker Ranch project site. Currently, Alton Parkway is under construction between Irvine Boulevard and Towne Centre Drive (as a six-lane roadway outside of Lake Forest and a four-lane roadway within Lake Forest) and will be completed prior to completion of the Shea/Baker Ranch project. The four-lane roadway portion within Lake Forest will ultimately be widened to six-lanes with the project.

As part of the grading operations for the Shea Baker Ranch project, it may be necessary to temporarily close a portion of Alton Parkway to move dirt from one side to the other. Pursuant to the recorded Development Agreement Paragraph E2e, the City Council has the option to close Alton Parkway for temporary periods of time between Commercentre Drive and Towne Centre Drive during grading operations once the applicant prepares and submits a Road Closure Plan. Up to three road closures of up to 49 days each are permitted, with an overall maximum of 70 days. Pursuant to an existing City standard condition, "Plans for signing, striping, and other traffic control devices shall be approved by the City Traffic Engineer." An addendum to the project traffic study (LSA September 2011), included as Appendix H of this Initial Study, analyzes the potential impacts of that short term closure. The traffic study addendum substantiates that re-striping of certain intersections would avoid temporary impacts of the temporary closure of Alton Parkway, which is already authorized by the DA. The re-striping recommendations will be included as Conditions of Approval by the City of Lake Forest and construction-related traffic impacts would remain less than significant. Therefore, there are no new significant and unavoidable construction traffic impacts as a result of the proposed project.

b) Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

No New Impact.

2030 Plus Project Condition

In addition to payment of fees identified in the LFTM program, Lake Forest Municipal Code Section 7.19.030 states that secondary improvements may be required for specific intersections identified for each project with the fair share of costs of any required improvements to be paid by that project. For the Shea/Baker Ranch project, the identified intersections are:

- Bake Parkway/Rancho Parkway South
- Bake Parkway/Baffin Bay (if access is taken via Baffin Bay)
- Bake Parkway/Rancho Parkway

Baffin Bay would not be a project access location. In order to analyze the remaining two intersections under worst-case traffic volumes, a long-range 2030 analysis was conducted. Table 3.16-17 provides ICU and LOS for Bake Parkway/Rancho Parkway South and Bake Parkway/Rancho Parkway without and with the project. As shown in Table 3.16-5, both intersections are anticipated to operate at an acceptable LOS, and the SBRA project is not anticipated to impact either location.

Table 3.16-5
2030 Plus Project (Project Access Intersections)

		2030 Baseline				2030 Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Intersection	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
9	Bake Parkway/Rancho Parkway	0.67	B	0.84	D	0.66	B	0.86	D
11	Bake Parkway/Rancho Parkway South	0.61	B	0.74	C	0.70	B	0.73	C

ICU = intersection capacity utilization
LOS = level of service

Project Access and Internal Circulation

As shown in the project site plan, Figure 20, *Circulation Plan*, access to the project site will be provided via two new roadways intersecting Alton Parkway, the extension of Dimension Drive, and project driveways on Commercentre Drive, and Rancho Parkway. It should be noted that full access onto Alton Parkway from the parcel north of Rancho Parkway is assumed in the City's traffic model and evaluated below. However, a sensitivity analysis is provided to evaluate access alternatives for this parcel.

PDF Traffic-1 ensures that the intersections of Alton Parkway/A Street, Alton Parkway/B Street, and Alton Parkway/Project driveway shall be signalized. At the following five locations, a HCM 2000 analysis was conducted to determine whether the intersections would provide satisfactory full-access operation in an unsignalized (i.e., two-way stop) configuration.

- Alton Parkway/Project driveway (full access north of Towne Centre Drive-Rancho Parkway)
- Alton Parkway/A Street
- Alton Parkway/B Street
- Project driveway/Rancho Parkway (full access east of Alton Parkway)
- Project driveway/Commercentre Drive (full access east of Alton Parkway)

An additional project access intersection, A Street/Dimension Drive, was analyzed as a roundabout using the Federal Highway Administration (FHWA) roundabout methodology.

Both 2015 and 2030 were selected as analysis time periods to examine intersection function at project opening (i.e., 2015) and under worst-case traffic volumes (i.e., 2030). Comparison between 2015 and 2030 results will also determine whether traffic signals are warranted by project conditions or by increases in ambient traffic. Trip generation resulting from buildout of the project are added to the without project through movements (calculated from adjacent intersections) to determine total volume for the six project intersections. The project-related traffic volumes at the project driveways and newly created intersections are based on a trip distribution developed from the output of the LFTAM model forecast volumes. The distribution percentages, as shown in Traffic Study Figure 3, are based on the centroid approach and departures from the LFTAM model. The traffic volumes at key intersections within the project site are derived from the ITE trip generation identified in Traffic Study Table E (based on land use trips) using the TRAFFIX 8.0 software. The project trip assignment is shown in Traffic Study Figure 4.

Circulation Plan

Source: SBRA 2012

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Traffic volumes in the following conditions are shown in the traffic study as follows:

- Cumulative (Project Buildout Year) volumes without project: Figure 5
- Cumulative (Project Buildout Year) volumes with project: Figure 6
- 2030 volumes without project: Figure 7
- 2030 volumes with project: Figure 8

The Traffic Study is included as Appendix H.

Traffic Study Table J presents the analysis of project access locations as unsignalized intersections.

Table 3.16-6
Project Unsignalized Intersection LOS Summary

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
Cumulative (Project Buildout) Plus Project				
1. Alton Parkway/Project driveway	>50	F	>50	F
2. Alton Parkway/A Street	>50	F	>50	F
3. Alton Parkway/B Street	>50	F	>50	F
4. Project driveway/Rancho Parkway	10.6	B	10.9	B
5. Project driveway/Commercentre Drive	11.6	B	15.3	C
6. A Street/Dimension Drive	3.5	A	3.6	A
2030 Plus Project				
1. Alton Parkway/Project driveway	>50	F	>50	F
2. Alton Parkway/A Street	>50	F	>50	F
3. Alton Parkway/B Street	>50	F	>50	F
4. Project driveway/Rancho Parkway	10.4	B	10.9	B
5. Project driveway/Commercentre Drive	11.2	B	16.8	C
6. A Street/Dimension Drive	3.5	A	3.6	A

LOS = level of service
sec = seconds

Traffic Study Table J indicates that three of the six full-access unsignalized project-access intersections (Alton Parkway/A Street, Alton Parkway/B Street, and Alton Parkway/Project driveway) are forecast to operate at unsatisfactory LOS during one or both peak hours if unsignalized. However, PDF Traffic-1 ensures that they will be signalized and the Traffic Study Table K substantiates that all three full-access intersections would operate at acceptable LOS (LOS D or better) during both peak hours if they are signalized. Since these traffic signals would be spaced close together, LSA examined average queue length anticipated at each of these intersections to determine the likelihood of interference with downstream signals. The analysis revealed that none of the average queue lengths extend to a downstream intersection. As a result, there are no new significant and unavoidable impacts.

The Traffic Study substantiates that the full-access driveway along Rancho Parkway and the full-access driveway along Commercentre Drive would not satisfy the peak-hour signal warrant during either peak hour. Furthermore, these intersections are forecast to operate at an acceptable LOS during the a.m. and p.m. peak hours in all three analysis years. The intersection of A Street/Dimension Drive is forecast to function at an acceptable LOS during the a.m. and p.m. peak hours as a single-lane roundabout.

Sensitivity Analysis

As described in the project description, alternative land uses are proposed on the parcel located on the northeast corner of the Alton Parkway/Rancho Parkway intersection. The proposed access into and out of this parcel for either land use alternative is undetermined at this time. The City's LFTAM model assumes full access onto both Alton Parkway and Rancho Parkway from the TAZ that incorporates this parcel. The level of service and traffic control, assuming a full access onto Alton Parkway, has been evaluated above. To evaluate ingress and egress alternatives for this parcel, a sensitivity analysis has been provided.

In the event that no access is provided along Alton Parkway from this parcel, the total trip generation from the Alternative A land use was distributed exclusively via the project driveway on Rancho Parkway. An HCM unsignalized analysis was prepared for this access scenario. As a result, the project driveway at Rancho Parkway would operate at acceptable LOS as an unsignalized intersection with full access and 100 percent of the traffic generated from this parcel. Furthermore, the traffic volumes forecast at the project driveway along Rancho Parkway would not satisfy the peak-hour traffic signal warrant. See Table 3.16-7.

Table 3.16-7
Project Driveway/Rancho Parkway Exclusive Access LOS Summary

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
Cumulative (Project Buildout) Plus Project	11.6	B	12.7	B
2030 Plus Project	11.2	B	12.7	B

LOS = level of service
sec = seconds

As a second alternative, should right turn in/out access be provided onto Alton Parkway, the traffic volume at the Rancho Parkway driveway would be reduced (i.e., less than 100 percent of the trip generation). Therefore, the conclusions regarding level of service and traffic control at the project driveway on Rancho Parkway would not change.

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

No Impact. The nearest airport to the project site is John Wayne Airport ten miles west of the site. Project development would not change air traffic patterns. Development of up to 2.379 residential units by the project would not result in a substantial change in air traffic levels. No new impact would occur compared to those identified in the OSA PEIR.

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The proposed project would not significantly increase hazardous conditions due to design features or incompatible uses. As a subdivision, the proposed project includes a tentative tract map that must be finalized in accordance with the City of Lake Forest's design standards for subdivisions, reviewed by the City Department of Public Works, and approved by the Lake Forest City Council (City of Lake Forest Municipal Code Chapter 7.24, Final Maps – Requirements and Procedures). By following the design standards for subdivisions, as required by the City, hazardous conditions due to design features and

incompatible uses would be reduced. Therefore, impacts would be less that significant and there are no new impacts compared to the OSA PEIR.

e) Would the project result in inadequate emergency access?

No Impact. Requirements for fire apparatus access roads are contained in California Fire Code (CFC; California Code of Regulations, Title 24, Part 9), Section 503. Approved fire apparatus access roads are required within 150 feet of all portions of the exterior walls of the first story of each building. Such roads must be at least 20 feet wide, have 13 feet six inches of vertical clearance, and must provide all-weather driving capabilities for fire apparatus. The project would comply with requirements for fire access roads in the CFC. In addition, the project site plan would be submitted to the Orange County Fire Authority (OCFA) for review and approval of site access before the City would issue building permits for the project. No new impact to emergency access would occur beyond that identified in the OSA PEIR.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

No New Impact. Orange County Transit Authority (OCTA) provides public bus service to the City of Lake Forest. An established network of bus routes provides access to employment centers, shopping and recreational areas within the City. Currently, the Shea/Baker Ranch area is served by route 206, which travels along Bake Parkway from Dimension Drive to beyond the northeastern community boundary and into the Foothill Ranch community. OCTA continually modifies the bus routes in order to meet the needs of its riders. As Shea/Baker Ranch is developed, routes may be added or modified, particularly along Alton Parkway. Metrolink and Amtrak provide commuter and passenger rail service to the area via a rail line that travels through the City of Lake Forest. The nearest rail station is located in the City of Irvine, at Barranca Parkway north of its intersection with Alton Parkway.

Additional bus routes would be provided along Alton Parkway. Over six miles of bikeways are provided within the community. Bikeways will be provided on both sides of Alton and Rancho parkways and Dimension Drive, consistent with Figure C-4 in the Circulation Element of the City's General Plan. Bike lanes are also located on one or both sides of "A" and "B" streets. These bikeways connect to existing and planned connections illustrated on the City's Planned Bikeways Map. A bicycle trail will be located along the length of Borrego Linear Park that allows for cycling, consistent with the City's Recreation Plan, Figure RR-1 of the Recreation and Resources Element of the Lake Forest General Plan. This trail is connected to Alton Parkway at its southern end and to Towne Centre Drive just west of Alton Parkway at the northern end.

The City's Recreation Plan indicates that Alton and Bake Parkways are arterials providing pedestrian access. In addition to those pedestrian connections, most streets within Shea/Baker Ranch provide sidewalks separated from the vehicular travel ways by a parkway. Two important off-street pedestrian trails are also provided, the Central Linear Park trail and the Borrego Linear Park trail, to create both north/south and east/west trails to facilitate movement throughout the community. These off-street trails provide almost two miles of pedestrian pathways. The design of these pedestrian connections is discussed more fully in Section 8 of the Area Plan, as a component of the Landscape Concept Plan.

The operation of the proposed project would decrease the amount of traffic on surrounding roadways, including bus ridership and bicycle traffic compared to the Site 1 OSA PEIR project because of its reduced size. The performance of these public transit facilities would not decrease. No new impacts result of project implementation compared to OSA PEIR site 1.

g) Would ICU (intersection capacity utilization) values at intersections, with the proposed project, exceed the City of Lake Forest performance criteria as specified in Table C-3 of the General Plan Circulation Element?

No New Impact. Project traffic impacts are analyzed above in Section 3.16.a. The planned LFTM improvements would mitigate the project impacts at these deficient locations to satisfactory LOS (LOS D or better) during both peak hours. As a result, there are no significant unavoidable impacts caused by the proposed project. No new significant impact would occur compared to the analysis in the OSA PEIR.

h) Would the proposed project include design features or uses that may cause traffic hazards such as sharp curves, tight turning radii from streets, limited roadway visibility, short merging lanes, uneven road grades, or any other conditions determined by the City of Lake Forest traffic engineer to be a hazard?

No impact. Potential traffic hazard impacts arising from the project design are analyzed above in Section 3.16.d. No new impact would occur compared to impacts identified in the OSA PEIR.

i) Would the project provide less parking than required, applying the standards found in the City of Lake Forest Municipal Code?

No New Impact. The City's Zoning Code, Section 9.168, and Section VI of the Planned Community Development Plan and Supplemental Text regulate the provision of parking within Baker Ranch.

Single-family dwellings are required to provide two covered parking spaces per residential unit. Multi-family dwellings are required to provide 1.5 parking spaces per unit for zero- or one-bedroom units, plus 0.5 parking spaces per unit for each additional bedroom per unit. Certain required parking spaces must be covered, as specified in Section 9.168. Multi-family residential developments are also required to provide 0.2 guest parking spaces per unit, rounded up to the nearest whole number of spaces. The Area Plan proposes to be consistent with, or exceed the City's standard parking regulations.

The OSA PEIR found that parking related impacts would be less than significant. The City's parking requirements for all proposed uses would be satisfied through implementation of Shea/Baker Area Plan Chapter 4. Therefore, the proposed project would not result in inadequate parking capacity and impacts would remain less than significant

3.17 UTILITIES AND SERVICE SYSTEMS

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to utilities and service systems:

PPP USS-1 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Utilities/Service Systems*) Compliance with Source Reduction and Recycling Element for solid waste reduction.

PPP USS-2 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Utilities/Service Systems*) Compliance with Title 24, California's Energy Efficiency Standards for Residential and Non-Residential Buildings.

a) Exceed waste water treatment requirements of the applicable Regional Water Quality Control Board?

No New Impact. Impacts on waste water treatment requirements were identified as less than significant in the OSA PEIR. The City of Lake Forest Municipal Code requires compliance with wastewater discharge permit requirements for industrial facilities and certain commercial facilities that plan to discharge industrial wastewater to the City's sewage collection and treatment system. The OSA PEIR determined that development would comply with all provisions of industrial wastewater permits which regulate discharges. Through compliance with the City's wastewater discharge permit, which is administered subject to the requirements and limitations of the NPDES program and enforced by the Regional Water Quality Control Board, it can be assumed that development of the project area would not result in an exceedance of the Board's wastewater treatment requirements.

The Shea/Baker Ranch project does not include industrial land uses. If applicable, wastewater discharged from the project site into municipal sewers would be subject to Irvine Ranch Water District (IRWD) wastewater discharge permit requirements for industrial facilities. After compliance with existing regulations, no additional impacts to wastewater discharge requirements would occur compared to impacts described in the OSA PEIR. In addition, the proposed project reduces development intensity by 436 residential units and 295,000 square feet of commercial uses, and thus would result in lower water demand, compared to development of Site 1 as analyzed in the OSA PEIR. As a result, there are no new impacts and impacts are reduced.

b) Require or result in the construction of new water or waste water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No New Impact.

Water Treatment

IRWD provides water service to the project area. Water treatment facilities filter and/or disinfect water before it is delivered to customers. Impacts to water treatment capacity were found to be less than significant in the OSA PEIR.

There are two different domestic water pressure zones within the project limits. The lower pressure Zone II, a gravity feed system from the reservoirs above the site, serves sites at elevation 750 feet or lower. The higher pressure Zone III, which is pumped to achieve adequate pressure levels, serves sites at elevations greater than 750 feet. Figure 21, *Water System*, illustrates the water delivery system for each pressure zone, and indicates what improvements exist and those that will be developed with Shea/Baker Ranch. As shown in Figure 3.17-1, all improvements are onsite. Construction of these improvements help complete IRWD's master planned infrastructure.

The project's water infrastructure plan consists of a dual water system. In addition to the potable water system described above, a second system will be developed to provide reclaimed wastewater for irrigation purposes. All developer installed common area and homeowners association maintained landscaped areas will be irrigated with reclaimed water. There are two reclaimed water zones, B and C. The backbone reclaimed water system is illustrated in Figure 3.17-2, *Reclaimed Water System.* This exhibit also indicates the existing and proposed portions of the reclaimed water system.

The proposed project reduces development intensity by 436 residential units and 295,000 square feet of commercial uses. The Shea/Baker Ranch project would result in lower water demand compared to

development of Site 1 as analyzed in the OSA PEIR. Thus, no new impacts to water treatment facilities are expected compared to impacts described in the OSA PEIR.

Wastewater Treatment

Impacts to wastewater treatment capacity were identified as less than significant in the OSA PEIR. Wastewater generated in the City of Lake Forest is conveyed and treated by Los Alisos Water Reclamation Plant (LAWRP). IRWD has the option of conveying flows from the project to the Michelson Water Reclamation Plant (MWRP). The OSA PEIR determined that both MWRP and LAWRP have capacity to accommodate flows from all of the OSA development sites. The proposed project involves reduced amounts of residential and commercial development compared to development of Site 1 in the OSA PEIR. The Shea/Baker Ranch project proposes 436 fewer residential units and 295,000 square feet of commercial uses. Therefore, the proposed project would result in reduced wastewater generation compared to development of Site 1 analyzed in the PEIR. Therefore, the project would not generate more wastewater, requiring more capacity than analyzed in the OSA PEIR.

The project's sanitary sewer system is illustrated in Figure 23, *Sewer Plan*. There is an existing IRWD pump station located northeast of Planning Area 1I along Towne Centre Drive. In the current condition, wastewater from the site and immediately adjacent areas is pumped to connect to a sewer line in Bake Parkway. With the development of Shea/Baker Ranch, new sewer lines will be installed throughout the project site, connecting to the existing system at Alton Parkway at the north end of the project site and Bake Parkway on the east. This will create a gravity flow system that ultimately connects to existing sewer lines at Irvine Boulevard, allowing IRWD to remove the existing pump station at some point in the future. Some existing force main lines will be abandoned in place when the IRWD pump station is removed. Construction of these sewer facilities will help complete IRWD's master planned infrastructure. Reclaimed water system is shown as Figure 22. As shown in Figure 23, all improvements are onsite. No additional impacts would occur compared to impacts described in the OSA PEIR.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No New Impact. The proposed project would include development of a system of storm drains. Part of the proposed storm drain network would discharge to existing storm drains in Bake Parkway; part of the network would discharge into a proposed onsite detention basin that in turn would discharge to Borrego Canyon Wash; while proposed storm drains in the remaining portion of the project site would discharge into a 48-inch storm drain proposed as part of the approved Alton Parkway road extension project. Improvements to Borrego Canyon Wash were analyzed in the Alton Parkway Extension EIR, but their construction is a part of the Shea/Baker construction phasing plan, as described in Section 3.4, *Biological Resources*. The impacts of construction of storm drains would be part of the impacts of the whole project analyzed throughout this Initial Study, including Section 3.4, *Biological Resources*, 3.6, *Geology and Soils*, and 3.9, *Water Resources*. Impacts of construction of storm drainage facilities were not analyzed in Section 3.15, *Utilities/Service Systems*, of the OSA PEIR but were instead addressed in Section 3.8, *Hydrology/Water Quality*. Drainage, hydrology, and grading impacts were found to be less than significant after mitigation in the OSA PEIR. No new significant impacts would result from construction of proposed storm drains and no further analysis of utilities impacts regarding construction of storm drains is required.

Water System

Source: SBRA 2012

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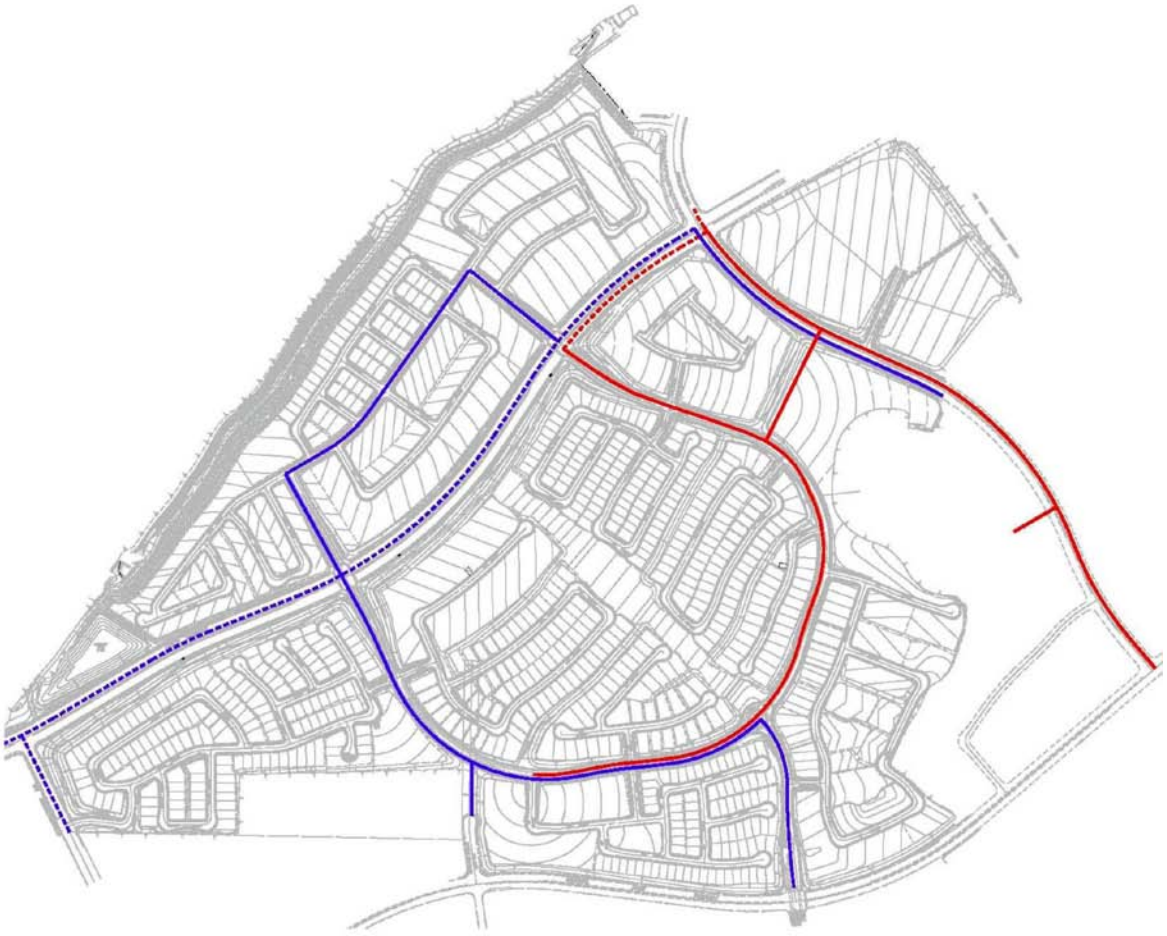
Reclaimed Water System



LEGEND

- RECLAIMED WATER ZONE B
- EXISTING RECLAIMED WATER ZONE B
- RECLAIMED WATER ZONE C
- EXISTING RECLAIMED WATER ZONE C

0 1,000
Scale (Feet)

Source: SBRA 2012

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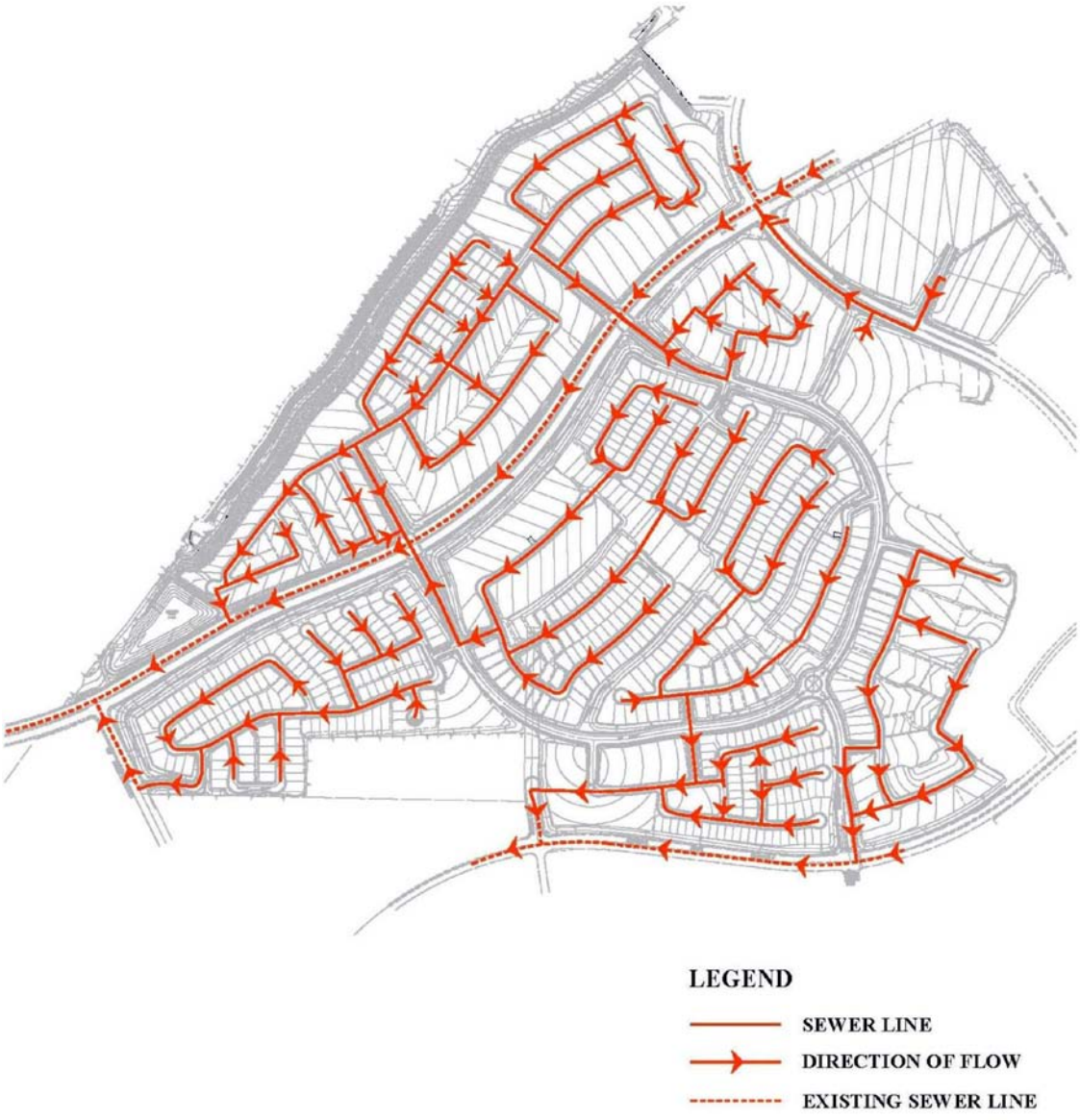
Sewer Plan



Source: SBRA 2012

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d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. Impacts to water supplies were found to be less than significant in the OSA PEIR; that finding relied on a water supply assessment (WSA) completed by the Irvine Ranch Water District (IRWD) in 2005. The proposed project involves reduced intensity of development, by 436 units and 295,000 square feet of commercial and thus would generate reduced water demand than would development Site 1 as analyzed in the OSA PEIR. In addition, IRWD adopted their 2010 Urban Water Management Plan (UWMP) in June 2011. The UWMP addresses water supply and demand, conservations measures and water recycling within IRWD's service area. The 2010 uses the City of Lake Forest's General Plan land use designations as the basis for determining demand. The proposed project is already included in the City's General Plan. The UWPM indicates that IRWD's supplies remain constant in normal, single-dry and multiple-dry years through 2035. (IRWD UWMP, Table 35) Therefore, no new impacts to water supplies are expected to occur as a result of the proposed project. Impacts are reduced compared to the Site 1 impacts identified in the OSA PEIR.

e) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. Impacts to wastewater treatment capacity are discussed above in Section 3.17.b. No new significant impact would occur.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

No Impact. Orange County is served by three landfills operated by OC Waste & Recycling, a County agency; the landfills are described below in Table 3.17-1

Table 3.17-1
Landfill Capacity

Landfill	*Location*	*Remaining Capacity*	*Maximum Permitted Disposal Rate (tons per day)*	*Estimated Closing Date*
Frank R. Bowerman	Irvine	59,411,872 cubic yards (31,666,528 tons)	8,500	2022
Olinda Alpha	Brea	38,578,383 cubic yards (20,562,278 tons)	8,000	2013
Prima Deshecha	San Juan Capistrano	87,384,799 cubic yards (46,576,098 tons)	4,000	2067
	Total	**185,375,054 cubic yards (98,804,904 tons)**	**20,500**	-

Source: CalRecycle 2010a

As shown above in Table 3.17-1, the three landfills in Orange County combined have remaining capacity of over 98 million tons, and total permitted disposal rate of 20,500 tons per day.

Solid Waste Diversion

Much of the solid waste generated in Lake Forest is diverted from landfills. The City operates 38 solid waste diversion programs, including recycling, composting, household hazardous waste, and public education programs (CalRecycle 2010b).

Solid Waste Generation

Regular trash pickup is provided by the City of Lake Forest through contracted services. Household waste recycling services are also provided through the City in order to comply with state-mandated solid waste reduction goals. OCFA provides and manages hazardous waste collection facilities at several locations throughout the County. The closest drop-off location to Shea/Baker Ranch is in the City of Irvine.

Project operation is estimated to generate 7 pounds of solid waste per day per dwelling unit (EIP Associates 2008), for a total of 16,653 pounds per day. Commercial uses would generate 6 pounds per 1,000 square feet per day for a total of 150 pounds of solid waste per day. Compared to the project analyzed in the OSA PEIR, the site would generate 3,052 fewer pounds of residential solid waste per day and 1,770 pounds of commercial solid waste per day. Some of that waste would be diverted from landfills. There is adequate landfill capacity in the region for estimated project solid waste generation, and project development would not require expanded solid waste disposal capacity.

Impacts to landfill capacity were found to be less than significant in the OSA PEIR. The proposed project is forecast to generate less solid waste than would development onsite analyzed in the OSA PEIR, due to the reduced intensity of the proposed project described in Table 1 above. Therefore, no new significant impact would occur.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. No impact to regulations governing solid waste disposal was identified in the OSA PEIR. As stipulated in the PEIR, the proposed project would be required to comply with AB 939[6] and with Chapter 16 of the City of Lake Forest Municipal Code. No new impact to regulations governing solid waste disposal would occur.

3.18 MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

No New Impact. This Initial Study demonstrate that the Shea/Baker Ranch project does not degrade the quality of the environment, reduce habitat for wildlife species, or endanger threatened plant and animal species as compared to OSA. With implementation of existing regulations, PPP's, PDF's and OSA mitigation measures, impacts remain less than significant. There are no new impacts.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable

[6] California Public Resources Code, Sections 40000 et seq.

when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

New Potentially Significant Impact. In the OSA PEIR, the City concluded that OSA contributions of GHG emissions are significant and unavoidable. However, since certification of the OSA PEIR, the new CEQA Guidelines for GHG were adopted. Additionally, no project level analysis for GHG emissions was conducted for Site 1. Therefore, an analysis will be prepared as part of the Draft EIR to calculate GHG emissions generated by the proposed project and to compare the impacts of the proposed project to OSA PEIR Site 1 emissions. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction may result in substantial short-term increases in air pollutants. As prescribed by the OSA PEIR, and to determine if the project would have significant impacts not addressed in the OSA PEIR, or significant effects substantially more severe than shown, it is necessary to compare the proposed Shea/Baker Ranch project with the project described as OSA Site 1. Rather than using the obsolete air quality model URBEMIS2002, the most recent version of the CalEEMod model (Version 2011.1.1) will be used to calculate the construction and operational emissions for the OSA Site 1 and the Shea/Baker Ranch's currently proposed project. As a result, this topic will be further analyzed in the Draft Supplement EIR for the Shea/Baker Ranch project to assess the new information regarding air quality emissions that has been identified since certification of the OSA PEIR, and whether it identifies a new significant impact or results in increased severity of a previously identified impact.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

New Potentially Significant Impact. Localized air quality impacts would occur when emissions from vehicular traffic increase in local areas as a result of the proposed project. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. As a result, an assessment of project-related impacts on localized ambient air quality will be included and analyzed as a part of the Draft EIR to determine if it generates any new significant impacts as compared to the OSA PEIR. See also 3.18b above.

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4. References

4.1 PRINTED REFERENCES

Army Corps of Engineers, Permit Number SPL-2002-00937. Section 404 individual permit was signed by ACOE on August 13, 2010.

BonTerra Consulting (BonTerra). 2004. Alton Parkway Extension Biological Technical Report.

———. 2008, August. Least Bell's vireo. Results of focused surveys for the least Bells' vireo and southwestern willow flycatcher on the Alton Parkway Extension project site, Cities of Irvine and Lake Forest, California.

California Department of Fish and Game (CDFG). 2010a. Draft Lake or Streambed Alteration Agreement Notification No. 1600-2008-0300-R5 Baker Ranch Planned Community Project.

———. 2010b. California Endangered Species Act Consistency Determination. No. 2080-2010-031-05. Signed on August 12, 2010.

California Division of Mines and Geology (CDMG), 2000. Digital Images of Official Maps of Alquist-Priolo Earthquake Fault Zones of California, Southern Region, CD 2000-003.

California Regional Water Quality Control Board (CRWQCB). 2010. Clean Water Act Section 401 Water Quality Standards Certification for the Baker Ranch Planned Community, City of Lake Forest, Orange County. This the RWQCB's 401 Certification for the Shea/Baker Ranch project.

City of Lake Forest (COLF). 2008. Opportunities Study Area (OSA) Program Environmental Impact Report (PEIR). This PEIR includes an analysis of the proposed 387-acre Shea/Baker Ranch project.

Dudek. 2011, March. Baker Ranch Tree Assessment Report. Prepared for Shea Homes.

Geosoils, Inc. 2011, August. Geotechnical Reconnaissance and Update Report for Tentative Tract 15594 (Lots 1 through 85), Lake Forest, Orange County, California.

———. 2010, July. Water Quality Management Plan (WQMP) for: "Baker Ranch", Tentative Tract 16466.

Hunsaker and Associates Irvine, Inc. 2011, March 9. Preliminary Hydrology Analysis for Tentative Tract 16466, Shea Properties/Baker Ranch, City of Lake Forest.

Lexington Geosciences. 2011, March. Phase I Environmental Site Assessment, Baker Ranch Property, Lake Forest, California 92630.

LSA Associates. 2011, July. Noise Impact Analysis Shea Baker Ranch, City of Lake Forest California.

———. 2011, August. Traffic Study, Shea Baker Ranch, City of Lake Forest, California.

———. 2011 September. Construction and Development Phase Addendum Traffic Study.

NMG Geotechnical, Inc. 2011, March. Geotechnical Review of Revised Tentative Tract 16466 Map, Baker Ranch, Lake Forest, California. Revised September 15, 2011.

Orange County. 2006. Draft Environmental Impact Report, No. 585, Alton Parkway Extension Project.

———. 2009, March. Addendum 1 to the Draft Environmental Impact Report, No. 585, Alton Parkway Extension Project.

———. 2009, July. Addendum 2 to the Draft Environmental Impact Report, No. 585, Alton Parkway Extension Project.

PCR Services Corporation. 2009, April. Letter report from S. Gasca and C. Dickson (PCR) to G. Spindler (Shea Properties) entitled "Shea Baker Ranch Plant Community Mapping and Impacts Analysis".

U.S. Fish and Wildlife Service (USFWS). 2010. Formal Section 7 consultation for the Alton Parkway Extension project and Baker Ranch Community Development project, Orange County, California.. WS-OR-10B0011-08F0868.

Vandermost Consulting, Inc. 2010. Shea/Baker Ranch Tentative Tract 16466 Conceptual Habitat Management and Mitigation Plan.

4.2 PERSONAL COMMUNICATIONS

Drukker, Collin (Senior Planner). 2011, December 12. Personal conversation. The Planning Center|DC&E

4.3 WEB SITES

Airnav, LLC. 2011, July 5. Airport Information. http://www.airnav.com/airports.

California Department of Finance. 2011, May. E-5 Population and Housing Estimates for Cities, Counties and the State, 2010-2011, with 2010 Benchmark. http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php.

California Department of Forestry and Fire Protection (Cal Fire). 2010, July 29. Draft Fire Hazard Severity Zones in LRA: Lake Forest. ftp://frap.cdf.ca.gov/fhszlocalmaps/orange/Lake_Forest_2010.pdf.

California Division of Mines and Geology (CDMG). 1994. Generalized Mineral Land Classification of Orange County, California: Aggregate Resources Only.

California Geological Survey (CGS). 2011, July 1. 2010 Fault Activity Map of California. http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html.

City of Irvine. 2006, August. Figure A-3: Land Use. http://www.cityofirvine.org/civica/filebank/blobdload.asp?BlobID=11039.

City of Lake Forest. 2009, March 18. Zoning Map. http://www.lakeforestca.gov/civica/filebank/blobdload.asp?BlobID=3663.

Department of Water Resources. 2003, October. California's Groundwater - Bulletin 118. South Coast Hydrologic Region. http://www.water.ca.gov/pubs/groundwater/bulletin_118/california%27s_groundwater__bulletin_118_-_update_2003_/bulletin118_4-sc.pdf.

Division of Land Resource Protection (DLRP). 2009, August. Orange County Important Farmland 2008. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2008/ora08.pdf.

Federal Emergency Management Agency (FEMA). 2009a, December 3. Flood Insurance Rate Map 06059C0315J. http://map1.msc.fema.gov/idms/IntraList.cgi?displ=wsp/item_10666436.txt.

———. Flood Insurance Rate Map 06059C0316J. http://map1.msc.fema.gov/idms/IntraList.cgi?displ=wsp/item_10666438.txt.

———. 2010, August 6. Definitions of FEMA Flood Zone Designations. http://msc.fema.gov/webapp/wcs/stores/servlet/info?storeId=10001&catalogId=10001&langId=-1&content=floodZones&title=FEMA%20Flood%20Zone%20Designations.

Metropolitan Water District of Southern California (MWDSC). 2007, September. Groundwater Assessment Study. Plate IV-1: Basin Reports Index Map. http://www.mwdh2o.com/mwdh2o/pages/yourwater/supply/groundwater/PDFs/GARCh4PlateIV-1Map.pdf.

Natelson Company, The. 2001, October 31. Employment Density Study Summary Report. Prepared for the Southern California Association of Governments. http://www.scag.ca.gov/pdfs/Employment_Density_Study.pdf.

Southern California Association of Governments (SCAG). 2008. Adopted 2008 RTP Growth Forecast, by City. http://www.scag.ca.gov/forecast/index.htm.

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Appendix A.
Tree Assessment Report

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Appendix B. Biology Studies, Permit Documents, OSA PEIR, Alton Parkway Extension EIR

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Appendix C. Cultural Reports

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Appendix D. Geotechnical Reports

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Appendix E.
Phase I Environmental Site Assessment

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Appendix F.
Hydrology and Water Quality Reports

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Appendix G.
Noise Study

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Appendix H.
Traffic Studies

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